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OCTOBER, 1897.

THE OPHTHALMIC RECORD

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The November number of the OPHTHALMIC RECORD will contain among others an original contribution by Archibald G. Thompson, M. D., "Complete Blindness due to acute poisoning from over-use of Essence of Jamaica Ginger"; one by Merle D' Aubigné Carhart, M. D., "A Case of Traumatic Blindness, with partial recovery of vision after fifteen months"; one by J. W. H. Eyre, M. D., B. S., "The Ætiology of Dacryocystitis"; one by H. V. Würdermann, M. D., "The Relation of the Objective to the Subjective Methods for ascertaining the Ocular Refraction."

There will also appear reviews of the most recent contributions to Ophthalmology published here and abroad, editorials by prominent Ophthalmologists, society reports and miscellaneous items of interest.

The RECORD particularly desires short, practical papers on any subject connected with Ophthalmology. These will be published at as early a date as possible. It is understood that, unless otherwise arranged, original articles when accepted are contributed to the RECORD exclusively. Illustrative cuts will be made at the expense of the journal and proofs for correction will be sent to authors when desired. Reprints with covers are furnished at cost. One hundred of these will be presented to authors *gratis* when a request for them is written on the original manuscript. The RECORD will be issued monthly and each number will contain about 54 pages of reading matter.

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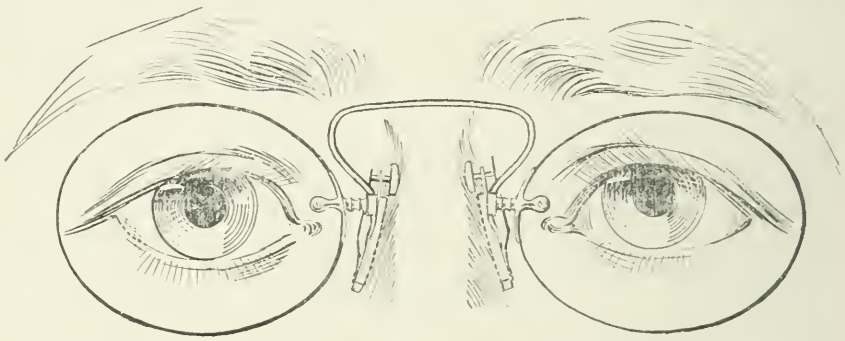

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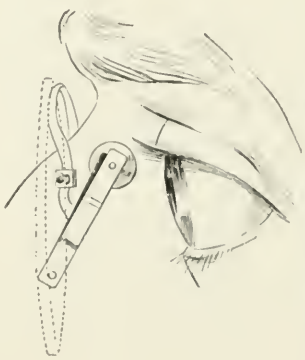

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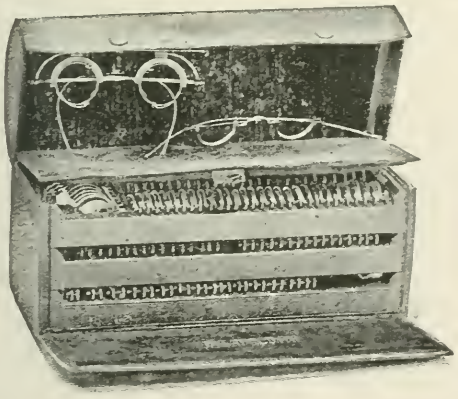

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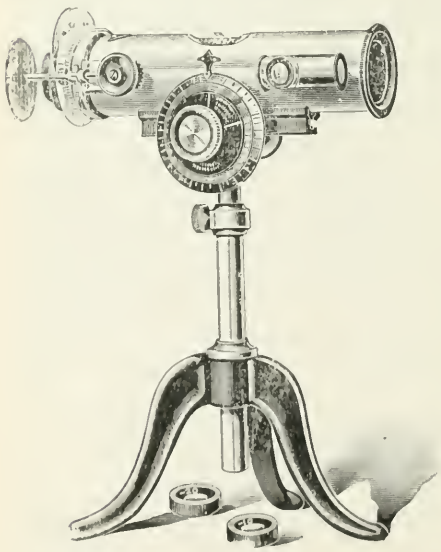

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THE
OPHTHALMIC RECORD

A Monthly Review of the Progress of Ophthalmology.

VOL VI CHICAGO, OCTOBER. 1897. No. 10, NEW SERIES.

ORIGINAL ARTICLES.

A REPORT ON HOLOCAÏN AS A LOCAL ANESTHETIC, IN OPHTHALMIC WORK.

By
H. V. Würdemann, M. D.,
and
Nelson M. Black, M. D.,
of Milwaukee.

A number of articles have been published during the last six months in the German periodicals concerning a new local anesthetic, which is a derivitive of P-phenetidin, named by its makers Amidin and Holocaïn and chemically known as P—Diathoxyathenyldiphenylamidin. It is a product of the Meister, Lucius & Brüning Works, Höchst a. M.

A sample was obtained and experimented with and has been somewhat extensively used in our practice for the last two months.

It is a white crystaline substance, a strong base, feebly soluble in cold water to 2½%, soluble in alcohol, ether and hot water; fuses at 121° C., neutral reaction, not changed by heating, although when heated in glass gives off a free alkali affecting glass making a turbid solution so should be heated in porcelain; sterilizing by heat is unnecessary as a 1% solution is directly bactericidal. Solutions are stable, a 1% solution remaining clear for two months.

We tried it first upon ourselves; anesthesia was produced in fifteen seconds with two or three drops of a 1% solution, lasting ten minutes and upwards; the application was attended by a slight smarting that lasted for about thirty seconds, but no more than from cocain, followed by a sensation of coldness and slight moisture which lasted

for several hours. The lids were squeezed slightly at first due probably to irritation of the sympathetic; an increased hyperemia of the vessels of the conjunctiva was noticed in all cases which lasted from one half to one hour. The cornea was moist and did not desiccate. The tension was not noticed to have been diminished as suggested by some experimenters. No action on pupil or accommodation was noticed in any case. Anesthesia lasted 12 to 15 minutes.

1st case.—Cataract operation with iridectomy on an old German woman; three instillations of a 1 per cent. solution, one minute apart, were used. She did not feel either the contact of the instruments or the cutting of cornea or iris.

2nd case:—Cataract operation on an American woman; had had a preliminary iridectomy done followed by choroiditis and iritis, with posterior synechia; three instillations of a 1 per cent. solution where used before operation. A portion of the iris was removed and complete toilet of anterior chamber made; one more instillation being made during operation. Patient said she felt no pain could only feel something was being done

3rd case:—Cataract operation with iridectomy, an old English woman; same amount of holocaïn used and complete anesthesia produced.

4th case:—A double iridectomy on an old Irish woman, very nervous and ignorant, said she did not feel any pain.

5th case:—A total tenotomy on an eighteen year old boy of extremely neurotic type, total anesthesia was produced with five instillations; three before and two during the operation of a 5 per cent. solution. This solution on standing deposited a large quantity of crystaline holocaïn, the solution was used in this condition of saturation on case No. 6.

6th case:—A double tenotomy and advancement on a Polish girl; two instillations were used before operation and on complaint during suturing an additional drop was instilled.

7th-9th:—The 1 per cent. solution was used in three canaliculotomies with complaint of pain in only one case.

10th-11th:—Two chalazia were removed with about same complaint from patient as with the use of cocain.

12th-15th:—Several foreign bodies removed from conjunctiva.

16th-26th:—Ten foreign bodies in cornea, some quite deeply impacted, one or two drops of the 1 per cent. solution sufficing to produce complete anesthesia.

27th:—A melanotic sarcoma of conjunctival limbus, size of a hazel nut was removed, the origin being scraped and conjunctiva sutured, without the patient feeling any pain whatever.

28th:—Curettement of large ulcer of cornea with absolutely no pain after three instillations of the 1 per cent. solution.

29th:—One drop of the above solution used before application of galvanic electrode to corneal opacity, (has been used for a dozen applications.)

30th:—Many applications of blue stone, silver, alum have been made and are greatly facilitated, as there is no blurring of vision after the use of holocaïn.

*The advantages of the anesthetic are:—its nontoxic action in local use, the stability and bactericidal quality of its solutions, the rapidity and completeness with which it produces anesthesia, the length of time the anesthesia lasts, the nondilation of the pupil, making it especially useful before applying irritating medicines as no unpleasant blurring of vision is noticed afterward, and the ready absorption of the drug enabling deeper operations to be performed. The drug is used in one fifth the strength of cocain and is proportionately already cheaper.

The only toxic effects that have been observed were in its use hypodermically, it producing clonic spasms like those of strychnia, when injected under the skin of animals.

Literature of Holocain to September 15, 1897.

1. Darby, H. (*Bost. Med. and Surg. Jour.*, June 3, 1897.)
2. Gutmann, (*Deut Med. Woch.*, No. 11, March 11, 1897.)
3. Heinz, R. *Centrabl; f. prakt Augenhkde.*, Feb., 1897.)
4. Heinz, R. and Schlosser, C. (*Klin Monbl. f. Augenhkde.*, April, 1897.)
5. Hirschberg, *Klin, Mon. f. Augenhkde.*, May, 1897.)
6. Kuthe, R. (*Centrabl, f. prakt Augenhkde.*, Feb., 1897.)
7. Loewenstamm, (*Therp. Monats.*, May, 1897.)
8. Tauber, E. (*Central, f. prakt. Augenhkde.*, Feb., 1897.)
9. Würdemann, (*Annals of Ophth.*, July, 1897.)

*Since writing above nearly a month ago a number of other operations have been made under this anesthetic with the same results.

A CASE OF ACUTE INSANITY DUE TO EYE STRAIN.

By Murray McFarlane, M. D.

Rhinologist, etc., St. Michael's Hospital,
Toronto.

Mrs. A., aged 27 years, referred to me by Dr. Waddy, of Rosseau, Muskoka, with the follwing history.

For several years she had suffered severe pain in the eyes, especially the left accompanied by occipital and frontal headache. Family history excellent, no insanity, health has always been good, never had a common "cold" until last week when she had a slight cough for the first time. Her husband informed me that the headaches had been gradually increasing in severity for several years, and culminated a few weeks previous to his consulting me, in acute insanity or delirium necessitating restraint

Dr. Waddy, his family physician reviewing the case came to the conclusion that the eyes were the cause of all the trouble and advised that an oculist should be consulted. This was reluctantly agreed to by her family who could not believe

that eye strain was the factor in causing the troublesome symptoms When brought to my office Mrs. A. was suffering intensely, was very melancholy and would scarcely answer any questions put to her. No disease was to be found until the eyes upon ophthalmoscopic examination, the fundus being normal, hyperopia was found in the right eye and mixed astigmatism in the left, while muscular tests showed a slight hyperphoria. Without a mydriatic the refraction was as follows: O. D.+0.50 D sph., O. S.+I. D. sp.⊂−3 D. cyl axis 15°. With atropine (gr. 2 to oz. i) instilled into eyes 3 times a day for a couple of days the result was: O. D.+0.75 D. sp O S.+1.75 D. sp ⊂−2.25 D. cyl axis 15°.

The latter correction was ordered, with entire relief of all the symptoms, showing that the nerve storms from the uncorrected anisometropia with spasm of accommodation so clearly shown by the result attained by the use of a mydriatic were the causes of the the mental trouble, which has entirely passed away, according to her physicians report.

The case is of interest, as it suggests the query as to what might have been the result if the error of refraction had been left uncorrected might not chronic melancholy or other brain trouble been the result?

A CASE OF SYMPATHETIC OPHTHALMIA FOLLOWING A SUCCESSFUL CATARACT EXTRACTION.

By W. L. BULLARD, M D.,

Columbus, Ga.

The most of us are ever ready to let our successes go on record and serve as an illuminator to our monument, but when those smiles of fortune are mingled with non-success we are loathe to turn over such plain cold facts to the sculptor, yet occasionally, though, not often, some of us are tempted to "enter where angels fear to tread" and paint both sides, that our "Fraternally" may criticise—not the doctor as is often the case— but the question, and govern themselves accordingly.

On the 16th of last November, I operated on Mrs. R. age 52, for senile cataract. I did Graefe's modified extraction with iridectomy. Parenthetically I'd say that I am fully aware of the fact that the large number of the leading oculists of this country and abroad favor the simple operation, yet I cannot divine why any one should do the simple operation in preference, when the only thing that can be said in its defense is 'that it leaves an ideal pupil"—a thing that the blind patient takes so little interest in; and should you question him with the interrogation. What kind of pupil—the ideal or coloboma? the answer will be something like this. "I beg for the restoration of sight irrespective of pupil or its shape." If this be so, then why add to his risk—the simple is more risky—and defer his hope?—it prolongs the treatment. My patient being an ideal one the operation was done without the least trouble or accident, and progressed as favorably as any case I ever operated on. I have done something over three hundred operations.) Three

weeks from the day I operated patient visited my office and I refracted the eye and with plus glass 12 D. distant visi n was 20/30 and with plus 18 D patient could easily read ordinary print. Two weeks later, patient had not worn the glasses, I was sent for and found what I thought to be a case of slight iritis Patient two days before this attended morning mass, the church being about one mile distant from her home, and on this particular morning it was very cold, and besides patient had also sat on the front porch at night and watched the exhibition of fire works about this time so I readily concluded the trouble was from exposure to cold etc. In a few days it occurred to me that my atropia (I am cognizant of the fact that *some* of the wise men affirm that atropia is contraindicated in this disease and when we couple this with the lamentable fact that the etiology and pathology of this deporable disease is more questionable than the propositions of Euclid induces me to say that as yet there is no golden key with which to unlock this mysterious door) drops were not doing any good and I had a case of iridocyclitis At this time patient complained of having la grip and I advised removal of the ball which was objected to. In a few days the unoperated eye became inflamed and she became wild, perfectly crazy and continued so for six weeks To make a long story short patient continued crazy for six weeks when her frantic delirium began to leave her and she began to improve mentally and physically, but the sympathetic trouble ran its course and at present, eight months since the operation the eyes have spells of inflammation which lasts a few days and then pass off leaving the eyes comfortable for two weeks or more.

This is the only case I have ever had of this kind and in as much as there was no anterior adhesion nor cystoid of the iris, I cannot understand why I should have had this one, unless it was, as I firmly believe, due to the indiscretion of the patient subjecting herself to extreme exposure. Dr. Knapp of New York City whose experience is second to none tells us—see Ophthalmic Record Vol. vi, page 385—in his last 891 extractions, two lost sight in the eye operated upon and two lost sight in the opposite eye from sympathetic ophthalmia. Drs. Kitchens and Walker of this city were kind enough to see the case with me.

A RARE REFRACTION CASE.*

By J. STEELE BARNES, M. D.,
Milwaukee, Wis.

Refraction cases that are both difficult and interesting are frequently brought to the notice of all ophthalmologists; but the one I have to report is particularly interesting as well as extraordinarily rare.

Mr. A, aged 33, referred to me by Dr. Gilles for correction of myopia, stated that his vision had always been exceedingly poor, especially that of the left eye, glasses giving very little improvement. The last lenses ordered gave him vision of $\frac{6}{24}$ in the right eye and $\frac{6}{60}$ in the left. Without any correction visual acuity

*Read at the Fifty-First Annual meeting of the Wisconsin State Medical Society, May 5-7, 1897.

was, right=counting fingers at three meters, left=counting fingers at two meters. Ophthalmometer gave astigmatism of 2.75 D against the rule in the right and 7.50 D against the rule in the left Ophthalmoscopic examination was unsatisfactory, but I was able to get an approximate refraction. Retinoscopy was exceedingly difficult, the corneal and retinal reflexes appearing to move in different directions, thus confusing the shadow; but taking my cue from the readings of the ophthalmometer, I was able after considerable time, care and patience to obtain the following refraction. Right eye, perpendicular meridian-6.50, horizontal-3; left eye, perpendicular meridian-11, horizontal-4, and this proved to be very nearly correct. I was then enabled without much waste of time with the test lenses to order,

R —4 50 sph. ⊃—3 cyl ax 90° = $\frac{6}{12}$
L.—5 sph. ⊃—8 cyl. ax. 90° = $\frac{6}{12}$

thus bringing the vision in both eyes up to $\frac{6}{12}$.

These revealed a new world to him, and I think I never before saw a patient evince such joy and delight. He had previously been informed by oculists that his left eye was amblyopic congenitally, and that he would never be able to use it. The particular feature of interest in the case is the 8. D. cyl. against the rule. Never before have I personally known, nor can I find any case reported where such a high correcting cyl. was fitted, except after cataract extraction or traumatism. In this case, the lens was present and no accident had ever happened to the eye. The astigmatism was entirely corneal. The case also demonstrates the value of Javal's ophthalmometer, and if the oculists, who had previously had Mr. A, under observation had possessed that instrument, I have no doubt they would have been as sucessful as I.

CORRESPONDENCE.

PITTSBURGH, PA., AUGUST 24th., 1897.

TO THE EDITOR OF THE OPHTHALMIC RECORD:

Will you kindly allow me a few lines of your space to thank Dr. Kirkendall for calling my attention, in the August issue of your Journal, to Dr. Ziegler's paper dealing with the topic which formed the subject of my article in the July issue of the RECORD? I was not present at the session of our state society at which that paper was read and, in some unaccountable manner, had quite overlooked it. It was, therefore, in ignorance of the fact that I was travelling the pathway already marked out by my gifted friend and classmate, Dr. Ziegler, that my paper was written and without any intention of raising a claim of priority.

Dr. Ziegler will, I know, should he have remarked it, accept this apology for my failure to acknowledge his precedent work along the lines with which my paper dealt, in view of my lamentable ignorance Dr. Kirkendall will please accept my thanks for his courteous note.

I am, very truly yours, FRANK H. EDSALL.

REVIEWS.

Further contributions to the bacteriology of keratitis—particularly of the purulent form of the disease. Uhthoff and Axenfeld. The present short communication* is a description of the results obtained by the authors during their investigation of sixty eight cases that are new and is intended to supplement their article published two years ago in the same journal regarding fifty cases. It was then said regarding ulcus corneae serpens: "According to our opinion mixed infection occurs and there by a less striking clinical picture results. The degree of virulence and the capacity that the living tissue has for resistance may be modified by the nature of the originally causing lesion, as happens in the case of other organs, without thereby disturbing the typical picture. This qualifying behaviour of the cause of the pus formation in the cornea, under certain circumstances offers another means for differentiating between inflammatory processes." "The typical ulcus corneae serpens were 34 in number and in all but one were the pneumococci of Fraenkel-Weichselbaum unmistakably found and in the greater majority existed as a pure culture. The microorganisms found in a few cases with the pneumococci were xerosis bacilli and staphylococci but in such small proportion that the aetiological importance of the pneumococci even here was undoubted. In twelve cases of this group a purulent tear passage offered a complication; five of these were carefully examined and the pneumococci were found alone in two but associated with other microorganisms in the remainder. Insomuch as in its earliest stages this condition presents itself only as a non-typical corneal infiltration if pneumococci are found as a pure growth in such, one might expect a typical ulcer serpens to develop in the course of a few days. The diplo-bacillus found by Morax in blepharo-conjunctivitis was present in great numbers in the single case in which the pneumococcus was absent. The next group consisted of 13 cases of atypical hypopyon keratitis and in general may be defined as differing from the former in extending not so much along the superficial layers of the cornea as in depth with an ulceration presenting a crater-like appearance with an ultimate tendency to perforation. Bacteriologically this class of cases resolve themselves as follows; only pneumococci found twice; pneumococci and other microorganisms, i.e., pyogenes, staphylococci and

*Weitere Beiträge zur Bacteriologie der Keratitis des Menschen, insbesondere der eitrigen. Von Uhthoff, and Axenfeld. Graefe's Arch. XLIV. 1.

streptococci, three times; bacilli and cocci not pneumococci, eight times. The complications in this group of thirteen cases were trachoma in four; blepharo-conjunctivitis in two; acute catarrh in one; blenorrhoea of the sack in one. In this latter group the conjunctival condition is the more important complication, the lachrymal inflammation appearing only once and in an instance where the pneumococcus was the only microorganism found. The next group consisted of three cases of kerato-malacia following xerophthalmia, all being in children less than one month old and characterized bacteriologically by the streptococcus and the pseudo-diphtheritic bacillus. Three of the five cases of superficial scrofulous keratitis examined, were found to be of the fascicular variety while the other two appear as a corneal infiltration, the microorganisms being the xerosis bacillus and the staphylococcus. Seven cases of dendritic keratitis were examined and in two only were the xerosis bacillus found alone although in two others it was associated with staphylococci while the findings in the remaining cases of this group were negative. Notwithstanding that the xerosis bacillus was found with relatively great frequency, it is too soon to consider it to be the prime cause of the corneal process but rather as a contamination of an old corneal condition; at all events it has not been possible to identify a particular microorganism as giving rise to this especial condition. The bacteriological finding in one case of rodent ulcer was negative. In two cases of corneal pannus the xerosis microbe was found once while in the other there was nothing found. The finding was negative in one case of hereditary interstitial keratitis of specific origin as was also the results of the examinations of two corneal complications following "spring catarrh." As a result of this recent series of investigations it is found that in almost all cases which can be clinically diagnosticated as typical ulcus corneae serpens the diplococcus of Fraenkel-Weichselbaum (pneumococcus) is present and in a great majority of cases as a pure culture and is in a relatively small number of cases associated with other microorganisms, as for example the staphylococcus and the xerosis bacillus. This finding is still more significant, as, in the first series, were isolated cases in which pneumococci were not found. Attention has been called to this and an unsuitable media was considered as the cause for it. The new experiments have confirmed earlier experiences and therefore the pneumococcus must be considered as the cause for the pus in ulcus corneae serpens. Only once has it not been found and then the diplo-bacillus of Morax was present. The then expressed conjecture that

occasionally pneumococcus infection of the cornea, according to the character and depth of the lesion, the degree of virulence etc., could proceed under other clinical pictures finds confirmation in this new series of cases. For example, in one of the cases in which the cornea had suffered from a deeply penetrating wound giving opportunity for infection of all the layers although only pneumococci were found the ulcer had at first somewhat less of a serpiginous character. As yet no satisfactory explanation has been given regarding the immunity of young children to this variety of ulcer. Frequently only pneumococci were found within the limits of typical ulcers complicated with tear passage troubles, while the sack contained other organisms as well, which would suggest some antagonistic property possessed by the pneumococcus tending to inhibit the growth of other germs in a territory already occupied by them. This was noticed even in ulcers of some considerable standing. Many times subcutaneous injections were made in white mice with the pneumococci obtained from pure cultures of the ulcus serpens which usually resulted in a pneumococcus septicaemia with a fatal termination and finding in the blood of the characteristic diplococci with a capsule. This new series also includes one case of kerato-mycosis aspergillina which with the one already studied gives a percentage of nearly two, which seems rather high although this condition probably occurs more frequently than one would suppose from the few cases reported by others. Associated with this were a few staphylococci and xerosis bacilli but they had apparently nothing to do with causing the corneal process.

The authors then discuss the various articles upon purulent keratitis in man which have appeared in the interval between their own publications. Kalt ascribes the ulcerations in blenorrhoea, which do not at all resemble ulcus corneae serpens, to staphylococci. In his opinion the quick recovery in some of the cases is due to the destruction of the microorganisms by phagocytes before they pass the membrane of Bowman. Hori has found streptococci in the infiltrated margins of atypical ulcers. Morax has cultivated the diplo-bacillus of chronic conjunctivitis from an atypical infiltration. The appearances noticed by Zirm beneath the epithelial defect in keratomalacia has not yet been sufficiently inquired into. Nüel attributes a peculiarly appearing superficial localized keratitis following an injury by ammonia to considerable masses of cocci but it does not seem reasonable to consider this to be analagous to the socalled superficial keratitis punctata and to be dependent upon a migration of microorganisms. Coppez

mentions the injurious effect of the toxins in diphtheritic conjunctivitis. De Schweinitz believes staphylococci to be one of the causes of suppuration after cataract extraction and refers to the suggestion of Haab regarding the pyocyaneus as a cause of traumatic panophthalmitis which Randolph claims is sometimes due to the coli cummunis. It is not surprising that the pneumococcus is to be found with other organisms in wound infection and in panophthalmitis when the nature of the lesion would be rather unfavorable for the development of the ulcer serpens. Bach no longer considers that the different varieties of keratitis arise chiefly from staphylococci and admits that his former objection to the aetiological significance of the pneumococci rested chiefly upon experiments made upon animals. His negative inferences seem to have been due to faulty methods as positive results are almost certain to follow a proper utilization of material obtained from a typical ulcer serpens when in an active state. Any one of three things can militate against a successful outcome; either an improper method in taking away the material from the ulcer, or in the transferring it to the culture media, or the nature of the media itself, this latter being the most frequent cause for failure. Therefore when the pneumococci are found in cover glass preparations from an ulcer serpens, even though they may not grow in the oven a negative opinion should not be immediately given. The authors have almost never noted a failure when they made use of blood serum tubes and feel certain that their few failures during their first series of examinations must rather be ascribed to a faulty technique and now believe the blood serum is superior to agar. The principal result of the Bach-Newman work is that they now recognize the pneumococcus as the important aetiological factor in ulcus corneae serpens and they even go so far as to call it the pneumococcus ulcer. The article concludes with a list of important contributions to this subject which have been published during the last two years.

Wm. Dudley Hall.

REPORTS OF SOCIETIES.

NOTES OF THE PROCEEDINGS OF THE OPHTHALMOLOGICAL SECTION OF THE XIITH INTERNATIONAL MEDICAL CONGRESS.

Moscow, August 19th—27th, 1897.

By CASEY A. WOOD,
of Chicago.

Although there was nothing startlingly new presented at this meeting the sessions were, in some respects, unique performances. As one of the many evidences of the desire upon the part of our hosts to please and entertain us, the papers announced to be read in Russian were withdrawn. These were subsequently translated and presented in French or German or they remained to be subsequently dealt with by the committee on publication. Moreover, the discussion was rarely carried on in Russian although there were quite a number of native ophthalmologists present who were not sufficiently conversant with French or German to allow them to take part in the proceedings. Altogether there was an average, daily attendance of 150 members, with, perhaps, twice that number accredited to the section. Germany and German speaking localities were best represented, among others, by Hirschberg, Kuhnt, (Königsberg,) Fuchs, Uhthoff, Schmidt-Rimpler, Fukala (Vienna), Mitwalsky (Prague), Pflueger (Berne), Deyl (Prague), Nieden (Bochum), Mandelstamm (Riga), Schanz (Dresden) and Elschnig (Vienna). Russia came next with such men as Bellarminow (St. Petersburg), Krukow (Moscow), Wagner (Odessa), Ewetzky (Moscow), Hirschmann (Charkow), Dolganow (St. Petersburg), Golovine (Moscow), Blessig (St. Petersburg) and many others. There were fewer representatives of France and French-speaking cities than I expected, but among them were the bearers of the following well known names; Chibret (Clermont-Ferrand), Dor (Lyons), Dufour (Lausanne), Darier (Paris), Vacher (Orleans), Vignes (Paris), and Lavagna (Monaco). The names of deWecker, Galezowski, Parinaud, Nuel, Javal, Meyer and several others were down for papers but they did not appear. Italy sent a few of her best men, among them the kindly and venerable Reymond of Turin. Prof. Angelucci (Palermo), Dr. Cirincione (Naples), Dr. Roselli (Rome) and Dr. Gondenzi (Turin) were also present at the Congress. Schiötz (Christiania) and Normal-Hansen (Copenhagen) represented Scandinavia. The

only British paper on the whole list was one by Hinschelwood of Glasgow. This fact and the almost complete absence of attendance from Great Britain were explained by the meeting of the British Medical Association in Montreal at the same date as the Moscow Congress.

There were very few American ophthalmologists present and only two of these (Dr. Southard of San Francisco and the writer) had the hardihood to read papers in English. Indeed, these communications, with Hinschelwood's paper, made the number three—Knapp's paper being offered in French.

The sessions of the Section were held in the amphitheatre of the Moscow Ophthalmic Hospital, a well equipped member of a numerous collection of hospitals, laboratories, dispensaries etc., known as the *Dievitchie Pole*, mostly directed by professors in the Faculty of Medicine of the Imperial University of Moscow. This hospital has 34 beds—four for acute contagious cases—and is in every respect equipped as a first-class teaching institution, with a good laboratory, library and museum. In 1896 there were 292 indoor patients, and 355 major operations were performed. The dispensary received 3209 outdoor patients. *Considering that the hospital—indoor and outdoor—is closed for three months of the year* this is a pretty fair showing.

There was but one criticism that might be advanced of the choice made for holding the ophthalmological and other sections in the *Dievitchie Pole* and that is its great distance (three quarters of an hour's drive) from the headquarters of the Congress, in the centre of the city. On the other hand, Prof. Krukow and his *confreres* furnished a luncheon to members so that there was no need of returning to town at the noon recess.

Before dicussing the meeting of the section in detail, notice should be taken of the Moscow Ophthalmological Society (*Cercle Ophtalmologique de Moskau*), a flourishing institution founded in 1887 by Ewetzky and others. Many of its papers and all the proceedings since 1892 have been published in the "*Westnik d'ophtalmologie*". On its tenth anniversary the Circle issued, in French and German, reprints of these and other communications and presented them to members of the Ophthalmological section of the Congress. Several papers, owing to their publication in Russian journals, are new to us and will repay perusal. I have no doubt but that copies of the book, especially if for libraries, can be obtained by addressing Prof. A. A. Krukow, Moscow.

Of the 83 reports and papers on the program the first one was presented by Uhthoff on the *Bacteriology of Keratitis and Conjunctivitis.*

Although we are not yet in a position to separate the various forms of corneal disease by means of a bacteriological examination alone, the latter should never be neglected, as a valuable aid to diagnosis and assistance in the treatment of cases. In many instances all that is required is a cover-glass preparation, stained after the method of Gram. Probably we are only in a position to speak positively about the bacteriological relations of *ulcus corneae serpens* and of *keratomycosis aspergillina*. The other microorganisms that give rise to purulent processes in the cornea do not produce definite signs or symptoms. Scrofulous (phlyctenular, eczematous) keratitis is not produced by pyogenic bacteria, a fact that should be noted in dealing with it, both clinically and from the standpoint of treatment. Spreading corneal ulcer is in all probability always produced by the Fränkel-Weichselbaum diplococcus. Whenever it occurs we have the clinical picture of ulcus serpens, and it is doubtful whether it ever produces a condition much differing, clinically, from the well known characteristics of eating ulcer of the cornea. Conversely, it is doubtful whether this formidable disease is ever produced in the absence of the diplococcus. It must be remembered, however, that injuries of the cornea followed by deep infection from the pneumococcus may produce an hypopyon-ulcer that tends to spread, and that a mixed infection with pneumococci may set up an atypical purulent keratitis. When atypical cases of hypopyon keratitis occur we usually find that they are due to the presence of other pyogenic organisms, such as staphylococci or streptococci. It has so far not been possible to produce in the lower animals a typical, spreading ulcer by inoculation with pure cultures of the pneumococcus. So long as no perforation of the cornea and Descemet's membrane has occurred bacteriological examinations of the hypopyon have been negative. If the early infiltrated area of an infected cornea be examined and pneumococci be detected, the disease should be at once treated as a spreading ulcer even if there be no other indication of the disease. The microorganisms of corneal disease are generally derived from the neighboring parts, conjunctiva, lachrymal sac, lid edges, nasal cavity etc. It is rare that infection is introduced by the instrument inflicting a wound. For keratomycosis aspergillina the aspergillus fumigatus is probably responsible. Other forms of keratitis are not accompanied by any particular organism. Those that have been isolated are the Fränkel-Weichselbaum diplococcus, streptococci, staphylococci, Pfeiffer's bacillus, bacillus pyogenes foetidus, bacterium coli, bacillus pyoceaneus, diplobacillus, ozenabacillus, aspergillus fumi-

gatus, tubercular bacillus and the lepra bacillus. Even in conjunctivitis *gonorrhoica* and *diphtheritica* the corneal complications are not, as a rule, the result of direct gonococcus and diphtheria-bacillus infections but of secondary purulent infiltrations. The so called xerosis bacillus cannot be put down as the cause of any definite corneal disease, although it is found in several forms of keratitis. In infantile xerophthalmus with keratomalacia the ordinary pyogenic bacilli (streptococci and staphylococci) must be credited with the damage done. Phagocytes cannot be said to play the chief part in the destruction of the organisms of keratitis.

As with keratitis it is impossible to assign to each form of conjunctivitis a certain bacteriological origin. Not only do some forms of conjunctivitis present no particular microorganism but the same agent may set up various and varying symptoms. The cover-glass examination is still the most important and the Gram method the most valuable. The bacteria that without doubt set up conjunctivitis in man are Neisser's gonococcus, the Fränkel-Weichselbaum diplococcus, the Koch-Weeks bacillus, the streptococcus pyogenes, the Klebs-Löffler diphtheria bacillus and the diplobacillus of Morax and Axenfeld. The other organisms found in the sac, Uhthoff does not consider of much importance in the etiology of conjunctival disease. The gonococci (not stained by the Gram process), when few in number and not very active, may set up a simple catarrhal conjunctivitis only, or may produce a granular condition of the lids quite similar to that found histologically in trachoma. The ophthalmia of the new born is only occasionally produced by the coccus of Neisser. The Fränkel coccus sets up a mild though contagious form of conjunctivitis that tends to early recovery. It is also found in chronic forms of the disease. Children are especially affected and false membrane is not uncommonly formed. This pneumococcus conjunctivitis is very likely to be associated with catarrh of the respiratory tract. There can be doubt of the contagious character of the process occasioned by the Koch-Weeks bacillus, not stained by Gram. It sets up a typical, acute conjunctivitis, accompanied by marked swelling of the tissues and the formation of a superficial pseudomembrane. Corneal complications are rare. Streptococci, stained by Gram, may set up a severe conjunctivitis and, according to Parinaud and Morax, affect the deep tissues of the eye, producing iritis etc. Moreover, they may give rise to the formation of false membrane and even produce death of the superficial layers of the conjunctiva, swelling of the preauricular glands, and

corneal complications. The diphtheritic conjunctivitis following scarlatina is due to these cocci. There is some doubt about its contagiousness. The Loeffler bacillus, stained by Gram, may, like the foregoing, lead to the formation of false membrane but the underlying tissues are more involved. Rarely, the diphtheria bacillus sets up only a simple catarrh of the conjunctiva. The conjunctiva of the sound eye may be infected by its fellow—a fact not to be forgotten in considering the question of immunity. A mixed infection of diphtheria bacilli with streptococci and staphylococci does not necessarily render the succeeding conjunctivitis more virulent. Uhthoff strongly recommends the Ernst-Neisser method (acetic-acid,—methylen-blue, followed by a watery solution of Bismark brown) of staining in the differential diagnosis between virulent diphtheria (Löffler) of the conjunctiva and other forms of membraneous conjunctivitis. He does not think that the ordinary cover-glass preparations are to be depended upon. Several weeks elapse before the bacilli disappear from the sac. The serum treatment is recommended when the bacteriological examination indicates it.

The diplococcus (not stained by Gram), lately described by Morax and Axenfeld, is probably a not uncommon cause of conjunctivitis, but its course is usually chronic from the beginning, with few symptoms of irritation, a slight amount of secretion, and very little swelling. Solutions of zinc sulphate act very promptly in arresting the progress of the conjunctivitis which, though very contagious, rarely spreads to the cornea. No micro-organism peculiar to trachoma has yet been isolated, nor has the bacillus of mild follicular catarrh of the conjunctiva been discovered, although it is possible that the pseudogonococci of Michel and others belong to a certain class of these cases. Any form of conjunctivitis may be modified by a mixed infection.

The question of refraction was barely touched upon—only four or five papers being read on subjects connected with it. When one notices the badly centered lenses—mostly *pincenez*—worn by almost all classes on the continent, has witnessed the measurement-methods generally employed in the clinics, and has looked in vain for systematic examinations of the extrinsic ocular muscles, he must conclude either that all the difficult cases emigrate to America or that ametropia does not worry the population of Europe as it does with us.

I was greatly disappointed that Nuel of Liege did not read his paper, "*Toxic Amblyopia is not primarly an interstitial optic neuritis but is a disease of the macula lutea.*" I hope to be able to present this essay in English form for the benefit of our readers.

Hirschberg gave a very spirited report on the *Prevention of Trachoma—the people's disease.* He showed that although there are, as is well known, localities in which trachoma is rare—a clinic in Switzerland having but 6 cases in 30,000 patients—the disease is universally distributed over the face of the earth. Wherever there are human beings, there is, or sooner or later will be, trachoma. He did not advance any new suggestions as to its treatment, which must be carried out with particular regard to the needs of each locality. Half a day was given to the discussion of this subject. Kuhnt drew attention to the nasal complications of the disease and advised that the nose and neighboring cavaties should always be examined and treated, if need be. He has been in the habit of performing the operation first proposed, I believe, by Heisrath. About one-half the tarsus, with a corresponding strip of conjunctiva, as well as (in some instances) a portion of the retrotarsal are excised in cases of recurring pannus and, indeed, in many instances where the cornea is only slightly affected but where the disease has finally implicated the sub mucous tissues. There was a general disposition to cast cold water on the proposition that true trachoma can be cured in six weeks by squeezing with forceps or by the use of any other instrument, that while surgical expedients are undoubtedly valuable in their proper place they should always be followed by topical applications, of which Roselli advised iodine compounds and Nenadowic itrol, as substitutes for blue stone. Darier thinks that no violent surgical treatment should be attempted until the usual mild means have been carefully tried. There were various forms of trachoma forceps exhibited by members, one, in a case with a small spoon and lance, to be used for precisely the same purpose that Gifford advises—the removal of irritant foci buried beneath a thin covering of cicatricial tissue in old cases. Dr. Katharina Kastalsky, one of the young lady ophthalmologists of the section, read a very clever account of the *hyaline bodies first found in trachomatous lids by Vennemann.* These examinations were made of excised conjunctiva (mostly the folds) in 59 cases. The hyaline bodies were found in every instance, being plainly stained both by the method of Gram and that of Ziehl-Neelsen. They are of various sizes and lie mostly free, between the cells. It rarely happens that one meets with hyaline "drops"—cells containing the hyaline bodies—where the cellular protoplasm is undergoing the secondary change, after which it rapidly frees itself from the surrounding wall. In none of the examined cases was there any indication of hyaline degeneration

of the vascular walls or of the connective tissue bundles. There was no reaction to the amyloid test in any case. These bodies are not peculiar to trachoma but their presence argues in favor of a chronic process resembling it.

Nieden read paper on *Ankylostomiasis and its effect upon the organ of vision* So far as I know the ocular relations of Minérs' anaemia have never been discussed before any American Medical Society and I am sure that the readers of the RECORD will be glad to know that Nieden's paper has been exclusively contributed to this Journal and will appear as an English translation in the November number.

The third report was by Fukala on "*The present status of the operations for the relief of myopia.*" The general opinion seemed to be that removal of the lens in high degrees of myopia is a most valuable expedient, but the operation should not be performed except under the most favorable conditions—absence of intraocular disease combined with the inability of the patient to make effective use of the eyes, with or without glasses. Fukala still prefers the discission method, even in persons over 16 years of age, although Vignes and others do simple extraction. Pflüger was in favor of the operation but had seen cases of subsequent vitreous opacity as a late sequel, even where the immediate results of the operation were all that could be desired. He advises the operator to leave the posterior capsule intact. Schmidt-Rimpler did not think the amount of the myopia was to be considered so much as the ocular condition of the patient. Can he earn a living? is the principal question. He thought it was doubtful whether the removal of the lens influences the subsequent increase of the myopia. Fukala objects to the use of the small Graefe knife, owing to the escape of vitreous, but advises that the discission needle be used thoroughly. This is passed in and a wide crosscut made through the anterior capsule into the substance of the lens. Afterwards atropine and the ice bag should be used for the relief of pain and other symptoms, but extraction at the limbus should not follow unless glaucomatous signs persist. This will rarely be needed and even then, if the keratome be employed, its point may be used to break up the lens mass. Removal of the lens does not predispose to detachment of the retina; it is well known that this accident often happens where there has been no surgical interference. Fukala enlarged upon the well known discrepancy between the refraction of some myopic eyes before and after operation. Von

Hippel had a case that measured—20D. before and + 4 D. after operation. Another had —22 D. before removal of the lens; + 5 D. afterwards. He explains this by contraction of the overstretched globar tissues as well as by the "pull" of the extrinsic muscles upon the eyeball. Fukala has noticed deposits on Descemet's membrane and believes these to be lenticular cells. Vacher thinks that extraction acts as a prophlylactic against retinal detachment.

There were shown several rather ingenious *attachments to spectacles for the temporary relief of ptosis.* These were made of padded piano-wire, and engaged the upper lid along its middle raphe, keeping the eye well open, and without causing pain.

Lavagna of Monaco read a paper extolling the merits of *arecoline hydrobromate as as miotic, and especially as a substitute for other miotics in glaucoma.* He showed charts illustrating numerous experiments made with the drug.

Wagner of Odessa is an *iridectomy-in-glaucoma* enthusiast. Of 75,000 carefully registered cases he had seen 1,000 instances of glaucoma and believes that more women than men suffer from the disease. When performed early enough, iridectomy is a curative procedure in the very great majority of instances, and there is no operation that will compare with it. Several speakers, among them Pflüger, did not agree with the orator and made a very decided exception in cases of chronic glaucoma, where the results were far from satisfactory.

Dr. Normal-Hansen presented a paper on *contusions of the eye ball with special regard to the fundus changes* following them. Examination of a large number of cases showed, in some, acute oedema of the retina, either from direct blows on the globe or from *contre coup.* The swelling, best seen along the vessels, disappears without disturbance of vision and leaves no fundus alteration whatever. In a second series of cases, generally where the traumatism is greater, the oedema disappears less quickly, leaving permanent evidence of the lesion, usually most marked about the fovea (traumatic changes in the macular region). These latter are, (1)macular alterations with typical rupture of the choroid, (2)macular changes with other affections of the choroid, (3) macular lesions alone. In all probabilty all the fundus lesions are of the nature of rupture of the choroid and possibly of the external layers of the retina. The secondary lesions show themselves in accumulations of pigment, in cicatricial plaques and in sub-choroidal and sub-retinal hemorrhages. These lesions affect that part of the fundus which is the favorite seat of choroidal ruptures generally, viz ; the macular region and the space between macula and papilla.

Deyl of Prague presented a case of unilateral (left) *coloboma of the macula lutea with post mortem report*, drawings and microphotographs. A number of members, including the writer, were of the opinion that the connective-tissue thickening, blood-vessel distribution and pigmentary deposits argued rather for intra-uterine macular disease than for true coloboma. If it be coloboma it is the first case of the kind examined microscopically. It occupied the temporal region two d.d's from the disc and was five times the size of the latter. There were a large pigment blotch in the centre and several smaller deposits on the border of the alleged coloboma. All traces of true choroid were wanting, its place being taken by a layer of connective tissue, that sent processes into the surrounding vitreous. The retina over the spot was defective at its borders where the external layers were wanting. The space between coloboma and papilla lacked normal choroid, whose place was taken by a connective tissue layer in which there were few vessels. The retina here had lost its external layers, although the inner ones were quite normal.

The final and one of the most important reports was that by Reymond of Turin, on the *Therapeutic value of subconjunctival injections.* There was not much enthusiasm displayed in favor of this method, while some members, like Adamuk, affirmed that after a faithful trial they had failed to obtain any particular, beneficial results from its use. It was suggested that paracentesis corneae relieves the pain and increases the curative effects of the remedy. Kuhnt considered it of special value in infective keratitis with discolored iris and beginning hypopyon. After enumerating the various substances—mercuric (1:5000-10000), and sodic (1:30-100) chlorides, hydric coloride (1:5000), quinine, toxins, salicylic acid, sodic sulphate, pyogenic bacteria, etc., used for the purpose the reporter said that solutions of sublimate more powerful than 1:2000 are always painful and sometimes dangerous, but that (except the occasional adherence of conjunctiva to sclera) 1:4000 is unobjectionable and readily borne by most patients. He believed, however, that 1:5000 or even 1:10000 without sodic chloride, is all that is required for ordinary cases. Injections of 1:2000 he gives only in special cases, as in injecting beneath Tenon's capsule in sympathetic disease. There can be no doubt of the penetration of the mercuric salt into the deep tissues of the eye (as witness the experiments of Bocci, Botardi and others) although there is some doubt how this is accomplished—possibly as an albuminate. The chief agents employed as substitutes for sublimate are mercuric cyanide and salicy-

late, iodine trichloride (Pflüger) and sodic salicylate (van Moll). He refered to Mellinger's experiments, where solutions of common salt (1--13%) gave practically the same therapeutic results as the sublimate solutions. Dor and de Wecker had obtained good results in detachment of the retina from sub-Tenonian injections of sodic chloride (1:20-30). Reymond thinks that although the procedure is a valuable one it should be used with caution and that we do not as yet know its *modus operandi*. In pyogenic infection of the cornea he believes solutions of sublimate, cyanide and salicylate of mercury to be more valuable than other remedies, and advises the injection to be made beneath the capsule of Tenon in sympathetic inflammation. These are the two conditions in which he has himself found the remedy of particular advantage, although he has obtained good results in other isolated instances.

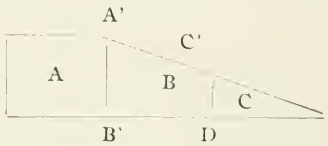
Darier read a very interesting paper on the same subject. Although not a panacea he had found subconjunctival injections of marked value. Solutions of sodic chloride have a very decided stimulant and trophic action, while the chloride and cyanide of mercury exhibit resolvent and antiseptic powers. In serious infective lesions following injuries or operations sublimate injections are the best and most certain remedies we have, and they should be given a trial. In sympathetic ophthalmia they are a very valuable remedy, especially in conjunction with mercurial inunction. In infective ulcer of the cornea subconjunctival injections, when employed with the galvano-cautery, bring about a rapid cure with a minimun amount of corneal opacity. Darier thinks that they *may* assist a cure in other forms of keratitis as well as in iritis, iridochoroiditis, neuritis, retinitis and retinal detachment. He especially recommends them in macular choroiditis, having often observed their prompt affects. Even in affections *a priori* incurable, as congenital choroiditis, myopic alterations, retinal hemorrhages etc., he has witnessed decided improvement. Apart from these results, which Darier regards as definitely proven, he suggests experiments with *injections of extract of the ciliary body*, which he has himself tried with encourageing results in threatened atrophy of the globe and in the early stages of cataract. He quoted the report of Dor, who cured a case of sympathetic ophthalmia by the subconjunctival injection and instillation of extract of the bovine ciliary body. He also spoke of the work of Coppez, who proved the great value of antitoxin serum injections in the ocular diphtheria of rabbits, produced artificially. He has himself been engaged in trying the effect of Marmoreck's antitoxic serum in rheumatic iritis.

Among the instruments exhibited to the section were Schiötz' *prismatic apparatus for the determination of the relative strength and condition of the eye muscles.* This instrument is not new and is described in the *Archiv für Augenheilkunde* Bd. XX. pp. 1-46.

Hinschelwood exhibited and gave a demonstration of the use of *Reid's portable ophthalmometer.* I was much impressed with the practical value of this instrument when I first became acquainted with it (see *Annals of Ophthalmology*, 1896, p. 322 and 1897, p. 454) and can warmly recommend it even to those who already possess a recent Javal-Schiötz model.

Prof. S. Baudry of Lille, demonstrated an easy *method of producing monocular diplopia* by the aid of a simple prism and showed its application in the detection of simulated blindness. This is a modification of the well known Graefe test but is considered by Baudry to be superior to it inasmuch as it is not likely to be understood by even the most intelligent simulators. The bi-refractive prism of Galezowski, Monoyer's double prism and the apparatus of Frölich allow equally the production of monocular diplopia or triplopia, but Baudry thinks that there are inherent sources of error in all these tests. For example, there is a decided difference in the clearness and coloration of the real and false images. The latter, as shown by refractive prisms particularly, is by no means as brilliant as the former. He also believes that the shape of the prisms may be taken into account by an intelligent pretender who will soon recognize the varying action of the refractive medium. He considers that in his little instrument these objections are removed and that the person under observation cannot distinguish the false from the true image and cannot tell whether the diplopia is monocular or binocular. Moreover the simulator does not know whether the prism affects one eye or both. Baudry places before the light—a candle frame at three metres—a piece of well made, dark red glass, because he has found that with a red light there is a marked difference between the true and the false image and it makes it impossible to say whether the double images are due to a monocular or binocular diplopia. The instrument itself consists of a prism, C (see figure) with its base applied to the glass figures A and B. These are made of plane window glass, carefully cut and with polished joints, covered by a round metallic box pierced, on each face, by a central opening, one 6 mm. and the other 3 mm. in diameter. A very simple device allows sometimes one sometimes the other line of separation (A' B' or C' D) to be placed in front of the sound eye and before the other eye

the second opening, which may, of course, be either the base of the prism or the prism itself. As the exterior of the instrument gives no



indication of its internal arrangement and the character of the images furnishes no clew it is impossible for the suspect to guess correctly what test is being applied even if he knew the construction of the apparatus. All the various tests for the detection of simulated monocular blindness may be applied with this prism.

The section had a dinner, in the Hermitage restaurant, that would have done credit to Kinsley or Delmonico—a dinner that presented gastronomic features not to be encountered outside of Russia.

REPORT OF THE PROCEEDINGS OF THE SECTION OF OPHTHALMOLOGY OF THE BRITISH MEDICAL ASSOCIATION; 65TH ANNUAL MEETING; MONTREAL CANADA, AUGUST 31 TO SEPTEMBER 4, 1897. REPORTED FOR THE OPHTHALMIC RECORD

By H. V. WÜRDEMANN, M. D.
Of Milwaukee

(*Continued from September number.*)

Dr. George H. Matthewson reported **A Case of Metastatic Adenocarcinoma of the Choroid.** Metastatic carcinoma of the choroid is of sufficiently rare occurrence to justify me in recording a case of the kind which through the kindness of Dr. Buller I have recently had the opportunity to study in detail. The patient, a lady of forty-eight, came complaining of almost complete blindness of the right eye, which had come on rather suddenly three months previously. The eye appeared quite normal externally, but the ophthalmoscope showed a large detachment of the retina occupying the lower part of the fundus. The refraction did not vary much from normal so when the age of the patient was taken into consideration this spontaneous retinal detachment suggested an intraocular tumour. To make a diagnosis possible Dr. Buller punctured the sclera and drew off a considerable quantity of serous fluid and the following day found the retina in its

normal position and at a short distance below the optic nerve a small flattened ovoid swelling was seen. Now for several years the patient had had a large firm nodular tumour in the thyroid. The character of this thyroid growth with the condition of the right eye, afforded a probable diagnosis, "Malignant growth in the thyroid with metastasis in the choroid." It was decided to remove both thyroid and eye at the same time and accordingly Dr. F. J. Shepherd extirpated the glandular tumour while Dr. Buller enucleated the eye. On cutting the eye open, a small flat ovoid tumour, with roughened surface was found immediately below the optic nerve. The microscope showed that the growth was chiefly in the choroid, the sclera and optic nerve being invaded to a slight extent by tumour cells while the retina was apparently free from invasion, The minute structure of the tumour was that of an adeno-carcinoma. Dr. Wyatt Johnston examined the thyroid tumour and found it was also an adeno-carcinoma. In nearly all the cases on record (about twenty) the primary tumour was in the mamma and in none was it in the thyroid which gives the present case some special interest.

For full accounts of the literature on the subject see papers by Mitrialsky, Schultze, Holden and Vainscke in the Archiv Ophth., N. Y. and that of Noyes in Trans. Amer. Ophth. Soc. VIII 538, 18.

A paper was then read by the Secretary upon **"An Unusual Case of Orbital Tumor"** by Lee, of Liverpool, which was supposed to be malignant. Diagnosis of Carcinoma having been made by expert microscopists but which after having been partly exterpated returned. The second growth, one year later, being found to have disappeared of its own accord.

Holt, of New York, said this case reminded him of one that he had 12 years ago. A young man in Boston, who had a growth in the orbit. The doctor told him he was going to die. He had some swelling of the lachrymal glands and as the upper lid was everted the tumor extended down on the lid of the eye. Local application made of glycerid of tannin and under that the growth disappeared, parts healed and became normal. He has been well ever since.

The President said there is a considerable number of cases in which mistaken diagnosis is made by the microscope. He quoted the case of a patient with orbital tumor which was first incompletely operated upon with resultant disappearance of the tumor.

Specimens of microscopical sections of opaque nerve fibers were shown under a microscope, having been prepared by Usher of Aber-

deen. Treacher Collins, and Devereux Marshall of London, had sent a number of pathologic specimens in jelly. Priestly Smith, of Birmingham, had sent pathologic specimens in formal and a model illustrating Tscherning's theory of the accommodation.

A. Alt, M.D., of St. Louis, read a paper on **"Histology of an Unusual Case of Total Blindness after Injury to the Skull."** Eye-ball had been removed by another surgeon on account of a bullet entering from the temple and ploughing upwards through the cerebrum. The patient was seen half-an-hour later by an oculist, in the meantime two physicians had been probing the the wound and removed some brain substance together with chips of bone and blood clots. The patient was semi-comatose. There had been hardly any hemorrhage, the left eye-lids were swollen. Antiseptic dressings were applied but exophthalmus occurred shortly afterwards. Three days after the injury, the cornea not being covered by the eye-lids, decay set in, whereupon the eye-ball was enucleated. The bullet was probably lost in the frontal sinus. The enucleated eye-ball was sent to Alt, who divided the same, which showed extensive hemorrhages in all the tissues of the eye-ball. Manifold ruptures and changes in the retina and choroid on microscopic examination There were evidences of beginning formation of new blood vessels and retinal degeneration which is remarkable as only three days passed since the injury. The optic nerve was not severed by the bullet which passed along the superior wall of the orbit, causing hemorrhage back of the eye and immediate blindness and exophthalmus. The hemorrhage was believed to be due to the contre coup as there was no damage done to the outer surface of the eye-ball. He exhibited 2 micro-photographs which showed the hemorrhagic conditions.

The President remarked upon a like case of a man who received many shots in the face without the eye-ball being penetrated although some reached the orbit. There were many ocular hemorrhages the sight being damaged.

R. A. Reeve, M.D., of Toronto, read a paper on **"Experiences with Cataract."** Being a personal relation concerning his cataract operations.

George T. Stevens, M. D., of New York, read a paper upon **"Suggestions Regarding an Element in the Aetiology of Trachoma"** with three principal types of crania recognized by anthropologists. The author has found characteristic directions of the orbit in relation to the plane of the horizon.

The cranium being in a position corresponding to the "primary

position" in the living subject, the axis of the orbit in the *meso-cephalic* cranium is directed above the plane of the horizon. In the long skull, the *dolicho-cephalic*, the axis is directed to a marked degree downwards. In the broad skull, the *brachy-cephalic*, the orbital axis also points downwards but to a degree less than in the case of the long skull.

The normal plane of the visual lines, when the minimum of nervous energy is directed to the eye muscles, corresponds with the direction of the axis of the orbit. In meso-cephalic heads there is generally anophoria, that is, a tending of both visual lines to rise above the plane of the horizon. In the dolicho- and brachy-cephalic heads the direction of the visual plane is down. There is katophoria.

In anophoria the eyebrows press down upon the lids and the lids press heavily on the eye-balls. In katophoria the eye-lids are loosely applied to the surface of the eyes causing little pressure.

The author regards the pressure of the lids in anophoria as an important element in the aetiology if trachoma. He has never seen the disease in cases of katophoria, its appearance being always in connection with anophoria.

The negroes of the United States, most of whom have the long, the dolicho-cephalic heads and the Bavarians among whom the brachy-cephalic type of head predominates and other nationalities where either the long or the broad skull prevails are comparatively immune from trachoma. On the other hand the Italians, the Irish and the Japanese, among whom the extreme meso-cephalic type prevails are unusually susceptible to the affection. The practical side of this view of the importance of anophoria as an element in trachoma is that if by carefully executed relaxations of the two superior recti the anophoria is corrected, and the visual plane is made to correspond to the plane of the horizon, obstinate cases which resist the ordinary forms of treatment recover without other therapeutic means.

The author recapitulates as follows:

1st.—During two years of careful examination I have found no case of trachoma in which the condition of anophoria did not exist.

2nd.—Nationalities in which the form of the head indicates a prevalence of anophoria are especially subject to trachoma.

3rd.—Nationalities in which the dolicho- or brachy-cephalic head is the predominant type and in which therefore the direction of the visual plane is that of katophoria, are comparatively immune from trachoma.

4th.—Relief to the condition of anophoria by bringing the normal

visual plane to a more favorable position is habitually followed by the most gratifying improvement in the trachomatous conditions.

The President said that the subject seemed to be one in which contributions from the various members regarding the racial relations of trachoma would be in order and asked Stevens what type of head was the prevailing one among the Jews and among the Egyptians.

Stevens answered that as far as his obser vations went they were of the meso-cephalic type. The face and lower jaw being long and the head high in proportion to its width and length. It differs decidedly from the typical Bavarian head which is broad, low and wide and the chin quite prominent. The Egyptian head belongs to the meso-cephalic type and is thus predisposed to trachoma.

Foucher, of Montreal, said he has made many researches of trachoma in Canada especially among Indians and has found only 3 cases of trachoma during 30 years. In Quebec he found several in the extreme north. In Ottawa he never found a case of trachoma among the Indians. Never found a case among the Indians around Montreal where he practiced very much. In many parts of Manitoba the Indians are subject to trachoma. He said that he found many missionaries who went to Alaska say that the Indians have attacks of special disease which exists in winter, fall and spring. He heard that this disease is not really trachoma but an affection from the snow.

Gould, of Philadelphia, said he has been so accustomed in practice to consider eye strain and ametropia as the cause of conjunctivitis that Stevens' communication strikes him with wonder and delight. He does not see why the pressure of the lids and eye-brows should induce trachoma. Eye strain is a great and constant cause of the incipient stages of conjunctivitis which leads into trachoma. Wherever eye strain exists the only cure is to stop the incipient cause.

Proudfoot, of Montreal, in speaking of trachoma among the native Indians, Foucher has not seen trachoma among them at all. In 20 years in Montreal he has seen half a dozen cases of trachoma among the Indians who live 8 or 10 miles above the city. With that exception he has in 8 or 10 years never seen trachoma among the Indians. In late years not at all. The Indians must have contracted the disease from nationalities living in the city.

Howe of Buffalo said while this theory is very beautiful still we must keep in view the actual facts which we have in trachoma. As to the methods of examination for the visual lines being above or

below the visual planes, an examination with the tropometer of quite a number of normal cases who have never complained would show much the same variation. Swan Burnett sent him a negro eye-lid; a series of sections were carefully studied and showed utterly no variation from the white. In 1877 he was in Egypt and found that the principal factor in the spreading of trachoma there was the carrying of contagion by the flies. The evidence is that when the fly touches the eye-lid of the individual of the patient he takes the disease and inoculates the next patient. As to the question of the race. After studying that and going to Wurzburg he was very much astonished and dismayed that the greatest amount of blindness was in Lapland where the flies were comparatively rare. With the Laps the cause was quite apparent. The people live in houses which have no chimneys and the place becomes filled with an atmosphere of smoke.

Osborne, of Hamilton, said he had taken occasion to ask the government physician in a large reservation where there were several thousand Indians, who vary a good deal in their way of living, but this man in all the years he had been government physician had never seen a case of trachoma.

Ryerson, of Toronto. Eye disease among the Indians is rare. He had examined a considerable number of Indians and found that granular disease is unknown though extensive pterygium is prevalent. He has never seen pterygium which had reached so high a degree as among the Indians.

Fryer, of Kansas City, confirmed the last two speaker's statements having had an opportunity of examining a large number of Indians at different times for ordinary conditions and never saw one case among them of trachoma. He noticed, however, pterygium in many. He has seen it in Cheyennes, Sioux, Comanches, Apaches and numbers of the Nez Perces.

Stevens, of New York, recognized the importance of eye strain in trachoma due to ametropia or heterophoria. The measurements of skulls which he has made have been done in the museums. He has not examined Indian skulls.

F. Buller, M. D., of Montreal read a paper upon **"Abnormalities in the Function of Extrinsic Ocular Muscles."**—He gave a report of 110 cases operated upon for heterophoria stating that only this number had been found suitable for operation in 10,000 eye patients. He does not operate upon lateral deviation of less than 2 or 3 degrees or hyperphoria of less than 1 degree. He considers the normal standard, ad-

duction to be 5 to 8 degrees; the normal adduction 25 to 50 degrees; sursumduction 2 to 3 degrees. This may be increased in any direction by exercise. Prisms give great relief in neurasthenic persons. Operation is to be practiced in but few. There were 37 cases of esophoria, 31 of exophoria, 30 of hyperphoria. In only 12 was there combined horizontal and vertical deviation. In only 2 of these upward and inward deviation, which seems to contradict the theory of Stevens that most cases of inward deviation are caused by hyperphoria. Of these there were 88 cured, 37 benefited, 8 unimproved and the result in 6 cases unknown, making 87 per cent benefitted, harm being done to the patient in no case. He considers the operation on the ocular muscles to be harmless in selected cases. Many of his cases had little or no refractive error. The refraction is always corrected if necessary and prismatic glasses seldom prescribed. He does not consider that general organic diseases can be caused by the muscular or accommodative asthenopia although he recommends in all cases of general disease the neutralization of any considerable degree of refraction or muscular anomaly

Stevens, of New York, said in regard to the marked discrepancy which appears in the literature of heterophoria in which almost every man appears to have been a law unto himself in his methods of examination it would seem that the methods of examination and the system of terminology which has been used could be improved upon. But so long as we continue this classification and its terminology, so long as we discuss heterophoria we should confine ourselves to the exact meaning of the terms we use and employ uniform methods in order to arrive at our conclusions so that we can make comparisons. He has, in Norris & Oliver's System of Diseases of the Eye, brought together all that was necessary to understand the meaning of these terms and the method of getting at the conditions. Buller has given us the example to take abduction of 5 degrees. In the Norris & Oliver's System he has given abduction as 8 degrees. We cannot both be right in that way and if we make our reports from this different standpoint we don't arrive at sufficient uniformity. If we use a phorometer we should get certain records. If we use the Maddox rod we get others. We should get almost anything with that form of instrument. The two methods do not give uniform results.

Mittendorf, of New York, asked Buller whether he had occasion to repeat the operation or the tenotomies. As greatly as he admired the genius of the man who has systemized the abnormalities of the

muscles yet he did not think he has found the ideal way of treatment, for, if we see patients that have been operated upon 20 or 30 times and find them unrelieved, it seems there is something wrong and he referred to cases that have not been treated by inexperienced hands but by gentlemen who are known to be high in the profession and especially in this branch. The condition of the muscles naturally is such that in some cases a tenotomy will benefit them. Buller said that he operated upon 110 cases, that there was a very little error of refraction or the eyes were emmetropic. Buller may not believe in the importance and necessity of correcting the very slightest degrees of error of refraction and he asked Buller whether in these cases the importance of an astigmatism of $\frac{1}{4}$ D. or $\frac{1}{2}$ D. has been taken in account. He found that these glasses go wonderfully where no other glasses would do any good.

Holt, of New York, said in talking with Buller a few days ago, he had occasion to speak of correcting hyperphoria and he told him that he seldom operated on a case that was less than 1 degree. His own best results have come in cases where the hyperphoria was less than 1 degree. He operates upon cases of 2, 3, 4 degrees. He does not mean to say he operates upon every case. In a case treated by one of the best men in Philadelphia the error of refraction had been carefully corrected for which she had worn glasses for several years. She had not over $\frac{3}{4}$ of a degree of hyperphoria for which she had worn prisms having had 6 or 7 pairs of glasses. He corrected this by cutting the center fibers of muscles, in July 1896. She returned last July saying that she was entirely relieved, using her glasses with perfect ease. He has not had many cases like this but now and then has some that lead him to look for small degrees of hyperphoria.

Marlow, of Syracuse, said in the first place in the examination by the Maddox test the degree of esophoria is larger than if we do not use red glass. This is due to the fact that the red rays are less refractive than other rays and consequently the difference is greater and we get increase of the convergence. Before deciding upon operation he examines the refraction and corrects the refractive error after mydriasis even to $\frac{1}{4}$ or $\frac{1}{8}$ degree of astigmatism. He also exercises those muscles which appear to be lacking and relief can be obtained in that direction. He has used Gould's method of exercise but has not found the results claimed by those who have written upon the subject. In cases of exophoria he has raised the adduction to 50 degrees, afterwards correcting the exophoria by operation with satisfactory results. He

has found a great advantage from the use of prisms in cases of hyperphoria not only of low degree but of considerable extent. Certainly ½ degree of hyperphoria in many cases gives rise to a great deal of discomfort. He does not operate until he has exhausted the refraction question and the question of muscular deviation by prisms. The bandage is a very important element. The eyes should not be occluded, in order to gain binocular fusion. In some cases placing prisms in front will make the eyes temporarily diverge. He has certainly been satisfied, as a rule, with the results of the operation in carefully selected cases.

Fryer, of Kansas City, asked Buller in the 100 cases reported of what number, if any, had any deficiency of the oblique muscles. He finds that this gives us quite as much if not more trouble than the recti.

Howe, of Buffalo, said with a carefully selected series made a number of years ago only between 1 and 2 per cent were found with the refraction normal. Until these are all corrected with certainty there is a reason for perhaps including some of them for operative cases which might otherwise be corrected with glasses.

Ryerson, of Toronto, has not operated very often and never operated on less than 2 degrees. He has had exceedingly good results and has had one result which was so good that he almost feared that in stating it he might be regarded as an enthusiast. Seven years ago a case was referred to him of a man who had attacks of epilepsy. He had but 2 D. of myopia and 6 degrees of hyperphoria. He corrected his myopia. He was having constant and severe headaches every few days. After very careful preparation and consideration he advised operation for hyperphoria. He did so and divided the muscles thoroughly. He made good recovery and he never had another attack of epilepsy. Hyperphoria is one of the causes of epilepsy.

Trow, of Toronto, had not done many of these tenotomies for slight hyperphoria cases and many agree that they are not required. He believes that the eye muscles are just the same as any other muscles. If they are weak they will show that weakness and if they require strengthening we must strengthen the whole body. Absolute correction does away with the little hyperphoria there is. A number of cases that he has seen that have been operated upon for low degrees of hyperphoria are much worse after the operation than they were before it. He reported a case of epilepsy in a little girl 10 years of age. The attacks were much less frequent if not almost gone after

correcting her with glasses. But when she took the glasses off or they were broken the attacks were much more frequent. While wearing the glasses they were very seldom and patient was in good health.

Buller, of Montreal, said what may be normal to one man is not normal to another, this must be taken in consideration. What is the normal standard? 5 or 8 degrees abduction or 25 or 30 degrees adduction? The relative proportion between these is very much the same and if a man is comfortable in his visual act with 5 degrees of abduction and 25 degrees of adduction after many trials of the strength of the muscles the evidence, so far as he is concerned, must be regarded as a normal condition. There are a number of people who cannot get an abduction of 8 degrees unless by long continued exercise. But up to the present time he has not been able to make up his mind that there is an absolute standard or he would work on it. He has found, however, that for esophoria there is a somewhat greater deviation by the use of the Maddox rod than by the Stevens' phorometer. He has no objection to doing frequent operation and getting very little effect at a time and repeating this operation as often as seems necessary to achieve good results if patients will submit to it. But he was quite sure if he would operate on patients many times they would leave him and he would never see them again. He never operates upon one muscle more than twice. He does attempt to correct every error of refraction and correct it as absolutely and completely as he knows how, and many patients cannot tell the difference beteen ¼ and ⅛ D. They may be smarter in other places, but not here. As regards the oblique muscles. The trouble in correcting them would be so great that it would not be worth while to try it. He has used a mydriatic in all his cases as he considers it is essential to use one of these drugs and where he thinks atropin is necessary he uses it in order to get the proper correction of refraction. People less than 50 years of age you cannot refract properly without mydriatics. He usually corrects refractive errors before any correction of the muscular faults. What need is there for prescribing glasses for patients who are not suffering sufficient to make it worth while to procure the annoyance of wearing glasses. He has not operated in all these cases where it was fair to assume that the headaches, etc. were due to a fault merely in the general health. If a person with a history of having headache for 15 or 20 years, is it not well to assume that it is the general health which cannot be so easily corrected? If you correct the refraction and your patient from that time on recovers from the malady which has pursued

him it is then fair to assume that the result was due to therapeutic measures.

Jules Jehin-Prume, M. D. of Montreal read a paper upon **"A Contribution to the Treatment of Syphilitic Eye Diseases."** He spoke in a general way of the average case of syphilis from the initial lesion to the various manifestations of the tertiary stage, the treatment being always mercury, nobody pretending to change it, the argument brought forth in his paper being the best method of administration. The serum injections are alluded to but as a means to be used in the future and not fully tested as yet. The older modes of administration as Gilbert's syrup, protoiodide, subcutaneous injections, frictions and subconjunctival injections, etc., all having disadvantage, the first upsetting the alimentary tract, the sub-cutaneous injections, even when practiced with the most careful asepsis, producing abscess to say nothing of the pain in administration and the sub-conjunctival injections, after the effects of the cocain have worn off, are very painful for several hours. Frictions do not up-set the digestive organs as quickly nor are they open to the objections above mentioned, but the objection of the patient to applying a repulsive and apparantly unclean pomatum to their teguments is one thing to be considered besides the mercurial affections of the skin and finally stomatitis. He praises intra-venous injections very highly having used nearly 2000 in his own practice and having but two cases of stomatitis. They act rapidly and if doses are properly regulated produce none or hardly any general symptoms. The administration of large doses is unnecessary as it goes directly into the circulation. There is no pain whatever and the operation takes hardly 2 or 3 minutes. The instruments necessary are a syringe, platina iridized needle, alcohol lamp, flannel bandage, hydrophyle cotton-wool, solution of alcohol or ether, colodion. The syringe put on the market by Wulfing-Lüer of Paris, being entirely glass and easily sterilized is the best as asepsis is essential in this method of treatment. The solution used is

Hydrarg. Cyanate	1.00
Aqua Dist.	100.00

1 cubic centimeter is used as follows, 1st. series, 20 injections, one every day, interval of 20 days. 2nd. series, 20 injections, one every 3rd. day, interval of 20 days. 3rd, series, 20 injections one every 4th. day, interval of 20 days. Last series, 1 injection per week as long as physician deems necessary. Objections and dangers are foreign matters, air bubbles, embolisms, thrombosis. The two former can no

longer exist with a suitable syringe and careful preparation of solution and patient.

Advantages of intravenous injection. It is painless, the quantity of mercury may be dosed rigorously, the rapidity of the cure, the inoffensiveness of the treatment and the patient is not kept from his daily pursuits.

Conclusions. Intravenous injection should be practiced only in serious syphilitic cases when immediate results are required. When other mercurial treatment has given no results or slight ones and the non-acceptance of other methods by patients.

Alt, of St. Louis, inquired concerning the exact doses of mercury.

Jehin-Prume answered, 1 cm. in a dose, varied according to the case, generally can be taken twice a week. Injections have been made many times in his own private practice even 20 or 25 times in the same vein. They have been found perfectly harmless.

Edward Jackson, M. D. of Philadelphia read a paper upon **"Foreign Bodies in the Cornea."** He reported 10 cases in which foreign bodies has been retained in the cornea for longer than 3 weeks. The character of the foreign bodies varying from cinders, dry leaves, gold wire, glass, beetle wings, etc. In one case a woman carried a piece of glass in the cornea for two years and three months. He states that the presence of a chronic corneal ulcer should always awaken suspicion of a foreign body and lead to careful investigation. The foreign body becomes deeply imbedded in some cases and does not cause inflammation. The epithelium proliferating around and over it. Sometimes a foreign substance may stick on the cornea for many days, weeks or months without causing inflammation or uneasiness. In the reported cases the corneal ulceration healed shortly after removal of the foreign bodies.

Alt, of St Louis, had two cases in which husks of grain had been lodged on the cornea for a long time; in one of which the time stated by the patient was over a year.

Würdemann, of Milwaukee, contributed two curious cases of foreign bodies as follows: 1. A man who had been hiving bees in August came to him in February of the following year stating that he had been stung in the upper eye-lid and since that time the eye had been sore. During the winter he had received treatment from two physicians without relief. Examination showed ulceration of the upper part of the cornea and eversion of the upper eye-lid showed great conjunctival thickening and ulcer about the size of a small grain of wheat

in the bottom of which there was a black speck. Removal of this by forceps showed a small hair-like body, which magnifying glass proved to be a bee sting. This had remained in the eye 7 months and caused the corneal ulceration which rapidly healed after removal of the offending body. 2. A young lady had been in a dentists chair one week before consultation. She came stating that while adjusting a gold crown a piece had broken and flown into her eye. This had given her but little inconvenience and on examination a small piece of gold was removed from the cornea.

Randolph, of Baltimore, said he had been struck by the fact that in this discussion, the foreign bodies which have remained for a long time in the cornea and conjunctiva without causing inflammation have been for the most part the hulls of seeds and wings of insects, in other words, substances which possess little if any irritating chemical property. We have in Baltimore an affection called oyster shucker's keratitis. This affection is produced by an injury from a minute particle of the oyster shell which is violently detached in the shucking process. It is a well known fact that minute particles of sand, grit, cinders etc. may remain for days in the cornea without giving rise to inflammation but an injury from a small particle of the oyster shell will produce infiltration of the cornea at the point of injury within twenty four hours afterward and accompanied with marked subjective symptoms. A bacteriological investigation of a large number of these cases failed to reveal any specific organism to which this violent and prompt reaction could be attributed. He was forced to the conclusion that the keratitis was probably due to the one or more irritating chemical ingredients of the oyster shell and among which the carbonate of lime plays the most prominent part. The freedom then from irritating properties probably explains the absence of inflammatory symptoms in such cases as have been reported by Jackson and Würdemann.

R. L. Randolph, M. D. of Baltimore read a paper upon **"A Preliminary Communication as to the Value of Salicylic Acid Ointment in the Treatment of "Spring Catarrh."** Randolph spoke of the futility of the methods usually employed in treating Spring Catarrh and reported three cases in two of which a cure had apparently resulted from the use of an ointment of salicylic acid and lanoline, and in a third case the improvement was so marked as to warrant the hope of a speedy termination of the disease.

The first case was a negro boy five years of age who had been affected for a year with all the characteristic symptoms of the disease.

The ointment was at first used in the strength of six grains of the acid to the ounce of vaseline, but later on lanoline was substituted for vaseline. This was rubbed into the eyeball by massage through the lids twice daily and in two weeks the symptoms had entirely disappeared and so far as can be learned have never reappeared. That was nearly three months ago. The second case was a boy seventeen years of age who had had the disease several years and who had been treated in all of the eye clinics in Baltimore but with no benefit. The ointment was used in the above strength for a few days and then it was made stronger (ten grains instead of six grains of the salicylic acid being used.) In a month he was practically well. In both these cases the changes were confined to the conjunctiva of the eyeball and were located at the upper and outer border of the cornea. The third case was a boy twelve years old. In this case the changes were confined to the tarsal conjunctiva of the upper lids, and consisted of flattened, pavement like vegetations which sprung from the conjunctiva. They were cartilaginous in consistency and pale in appearance, indeed there was a noteworthy absence of congestion of the conjunctiva anywhere. Here the ointment in the strength used in the first two cases produced no effect and it was not until the strength had been increased to sixty grains that the nodules began to disappear and now an ointment of the strength of seventy five grains of the acid to the ounce of lanoline is used once daily. Cocain must be instilled several times before using this ointment which latter is applied on the end of a mop made by wrapping the point of a toothpick with cotton. The ointment should be rubbed in vigorously even if bleeding be produced, and it should be done faithfully every day. Before the adoption of this treatment the usual remedies had been tried on this boy but with no benefit. His left eye has only a few nodules left and the other eye is not far behind in improvement. This after two months treatment. In all these cases the prompt disappearance of subjective symptoms (itching and burning) was striking. In the first two cases the patients complained of some irritation after the use of the ointment but this did not last long. Dr. Randolph emphasized the fact that in those cases where the disease showed itself in the tarsal conjunctiva the ointment must be applied by the physician as the patient would be unable to evert the lids and rub in the ointment effectively. He spoke of the value of salicylic acid ointment in chronic affections of the skin and the prominent position which this variety of ointment occupied in the armamentarium of the dermatologist, also of the man-

ner in which the ointment acted and concluded by saying that although it was too soon as yet to draw positive conclusions as to the value of the treatment it would seem that this method lent to the prognosis of vernal catarrh a somewhat brighter aspect.

The President said there is sometimes difficulty in distinguishing this form of conjunctivitis from trachoma. He saw a case this summer who had a good family doctor and which had been treated a great deal by several ophthalmic surgeons as trachoma and had been kept out of school on account of its supposed contagiousness.

Reeve, of Toronto, said in the worst case of this sort that he had seen where ordinary remedies had failed under chloroform anesthesia he had scrubbed away all the redundant tissue. The cornea seemed quite small before that, the eye being sensitive and weak. After the operation the cornea seemed of a normal size. At the time of the operation there was no reaction. Patient remained well for a year and returned a few weeks ago being treated in the same way, the improvement being almost magical.

Randolph said two of these cases were very well known among the ophthalmologists of Baltimore. They had gone the rounds and made their appearance every spring. The subjective symptoms disappeared entirely in the early part of the cold weather.

G. H. Burnham of Toronto, read a paper upon "**The Hypodermic Use of Pilocarpin in Eye Disease.**" He gave a brief sketch of a man, suffering from rheumatic inflammation of both eyes of at least three years duration associated with well marked chronic articular rheumatism. In each cornea there was a number of closely placed small infiltrations occupying an area larger than the pupillary area with the rest of the cornea clear. The infiltrations of the left cornea were undergoing undoubted calcareous degeneration. There was also slight affection of the iris and vitreous of each eye. R. eye V = a few letlers of No. XX Sn. type for distance at eight inches. L. eye V = a few letters of No. XV of same type at eight inches. He had previously to consulting him been under the care of specialists and taken almost every variety of medicine. He was at once given hypodermic injections of pilocarpin. In three weeks there was an improvement. Under this treatment continued every six to eight weeks during the latter half of 1890, 1891, 1892, 1893 and up to June 1894, there was an uninterrupted improvement till at the end of this time the vision was $\frac{20}{20}$. He is now very active, being able to run up and down ladders quite swiftly and the vision is still $\frac{20}{20}$. There has been no relapse. He also gave a

brief summary of a case of acquired syphilitic irido-cyclitis of both eyes, which had been under treatment with mercury and iodide of potassium internally and atropine locally for nine months prior to consulting him. The eyes had steadily grown worse, till the vision when examined by him was R. eye a few letters of Sn. type No. XL. L. eye p. l. only. There were in each eye large posterior synechiae and lymph in the pupillary area. In this case the combined treatment, that is, mercury and iodide of potassium internally and pilocarpin hypodermically caused immediate improvement and at the end of nine months the vision was R. E. = $\frac{20}{15}$ L. E. = $\frac{20}{20}$.

The third case was that of a man with severe gonorrhoeal irido-cyclitis of each eye, with copious effusion of lymph into the pupillary area. Here the combined treatment was followed by excellent results. At the end of 3 months the vision was $\frac{20}{30}$ mistily but correctly.

Burnham looks upon this combined form of treatment as exceedingly valuable and reliable. He has also used it to a limited degree in other affections of the eye with equally good results and thinks it ought to be very efficient in cases of sympathetic ophthalmia. His solution is muriat-pilocarpin 5 gr. to 1 dr. The dose varies from gr. $\frac{1}{2}$ to gr. $\frac{1}{4}$. He gives the injections in groups of from 7 to 10, sometimes as many as 14 for the first group with intervals of six to eight weeks. He gives it as a rule every day, occasionally, however, skipping a day. The patient is always put to bed in blankets, with temp. of room 75°. He lies with his head upon a low pillow, and a mug held by himself to his mouth to catch the saliva which freely flows. He, thus is able to remain very quietly in bed and stays there for 1½ to 2 hours. At the end of that time he gets up and is wiped down with a warm towel. The injections are given in the afternoon and the patient does not go out till the next day. It is very necessary indeed to follow out an exact routine while giving the injections, otherwise there are symptoms more or less alarming and which interfere with its proper use and effect. He also spoke of the necessity of persistence in its use as long as there was an improvement, in order to get the full and best result.

Fryer of Kansas City, confirmed the general experience of the speaker, having used it very frequently in hemorrhages of the retina and sympathetic ophthalmia. His method of administration is similar to Burnham's. He puts the patient in bed for a day after each dose, beginning with 1-10 or 1-8 of a grain increasing until a grain, giving in connection small doses of alcoholic stimulants. In most instances

there is slight flow of saliva and increase of renal secretion, in a few, acute vomiting occurs. In most cases there is little or no reaction. It is important to keep the patient absolutely quiet in bed. He had seen vitreous opacities removed and improvement in sympathetic ophthalmia and had found large increase in visual acuity by continued use of the drug. He believes it should be given for a time, then stopped and then taken up again.

Alt of St Louis, supported the ideas of the essayist. He has had a number of disagreeable experiences in the use of of pilocarpin which have prevented him from using it as frequently as formerly. He has quite a number of cases which have been treated for a continued time with pilocarpin injections, in which the opacity did not clear up but in which he had good results afterwards. In syphilitic cases he prefers corrosive sublimat to pilocarpin. He cited a case of a young girl who had lost one eye and who had detactment of the retina of the other which was very myopic. He treated her with pilocarpin injections and on the 7th or 8th day menstruation occurred for the first time. The retina became reattached and has remained so for eleven years.

Mittendorf of New York, said in regard to the tolerance of the drug in different individuals, he has come to look upon this drug as his chief reliance in cases of opacity of the vitreous and especially if associated with detachment of the retina and has given it in very small doses and has continued it for a long time. He has tablets made, 1–100 part of a grain and has these pills taken one three times a day giving directions to the patient not to take much fluid, dress warmly, and not expose themselves to taking cold; and he has noticed where after the continued use of this drug for several days faint feelings have come on, so that the patient had to go to bed. If this dose is used it may be continued for months in the majority of cases.

Holt of New York, said since Mittendorf gave his method of using pilocarpin in detachment of the retina, 15 years ago he has conscientiously used it and has cured several cases of detachment of the retina. The first was a case of 8 or 9 D. of myopia in 1884. The lady was one who traveled about the country and consulted several men who did not use any treatment. He began the use of pilocarpin according to Mittendorf's directions and at the end of about 10 weeks the tumor began to absorb and completely disappeared. He has seen the lady every year since. She has good vision in the eye and has no trouble. This case had been seen by several prominent men and they thought it was of no use to try to give any treatment. He has had

several cases since that and used Mittendorf's method but since then he has used the nitrat of pilocarpin in 1 per cent. solution for a long time by injecting the drug but found in some cases it was very annoying. He has given it by the stomach and has equally good results. There is certainly a beneficial effect in giving it with mercury and iodid of soda.

Williams of Boston, had two cases of episcleritis in which the injection of pilocarpin, beginning in 1–6 grain, seems to have given satisfactory results. It seems always best to make the solution fresh for each injection and make sure that it is thoroughly sterilized He remembers having seen an abscess following pilocarpin injection into the arm, which was very slow to heal and which seems to him to have been due to the solution not being sterilized.

Trow of Toronto, said since seeing several cases in the same hospital under Burnham he has used pilocarpin in the same way as Burnham with favorable results.

Burnham of Toronto, found no necessity of keeping the patient continually in bed. The routine in regard to pilocarpin is very important and not to be deviated from until you have a decided effect and you have symptoms which are characteristic. He gives no alcoholic stimulant. He has never given pilocarpin in large doses. If excessive flow of saliva results, pilocarpin has been mal-administered in some way or other. Women are more particularly affected by pilocarpin than men. It is very necessary to let them lie down with their head on a thin pillow and keep them thoroughly covered. He makes them lie in bed and stay there two hours. When they get up they are to be wiped down with warm towels or they will suffer. He lets them go out the next day and take exercise and never has any trouble. He warns them to walk about quietly. He stops treatment for a length of time and begins again in about 8 weeks, when the patient comes more often the progress is very much more satisfactory.

Alt of St. Louis, said he has employed the same method. He had only one case in which he had to stop it. He insists upon the treatment in connection with other drugs. In vitreous opacities you see them gradually fade away, becoming thinner, which shows you the marvelous effect of this drug. The danger of forming of abscesses by injecting is very small. He dips the needles into 2½ solution of carbolic acid before putting it in the second time. He has never had an abscess and has used the same solution for 7 or 10 injections.

Holt of New York, has used the plan recommended by Mittendorf and kept his patient in bed, then massaged every day, not going out of the room and for weeks in the house. She lost a number of pounds.

The President had a man with complete detachment of the retina, high degree of myopia and no light perception in either eye. He used pilocarpin in his case and the result was satisfactory. He could read large type but he could not say if he would hold that. When you are treating a case of detached retina do you keep the patient in bed a long time? *Holt* answered that he was not fond of keeping them in bed.

C. H. Williams, M. D. of Boston, in a report on "**Simulated Monocular Blindness" and "Instruments for Testing Color Perception.**" Showed tests for simulated monocular color blindness, one of which consisted of a trial frame containing two Maddox rods. One at 90 degrees and the other at 180 degrees with red glass behind one. If the patient saw a cross composed of a red line crossing the white, he has binocular vision and colors may be used to distinguish the eye with which he sees if there is only monocular vision. He also showed cards of numbered letters in light red and light green on a gray background. The reversible frame with red and green glasses is used. The red letters of course are not seen through the red glass, nor the green through the green glass. In simulated color blindness he uses the Holmgren worsteds, having the colors tagged.

T. H. Bickerton, F. R. C. S. of Liverpool, contributed a paper upon the "**Question of Color Vision in the Mercantile Marine**" which was read by W. H. Smith, M. D, of Winnipeg. He showed that in color testing it was necessary to use colored lights at a distance shaded by smoked glasses in order to evolve conditions similar to those met with by pilots and engineers in their work. The Holmgren test by wools is not infallible.

Williams of Boston, said there are a few things necessary in testing for the color perception, one is a comparison test with a large number of colors, which will show whether the perception is lessened for red or for green. It is very necessary to have a transmitted light through a small measured opening in every case. This has been done for some time in his services. He then exhibited a comparatively simple instrument for transmitting light through measured openings, presenting conditions met with in actual service giving small retinal images which would shut out cases of central scotomata due to tobacco and other causes, in which the periphery had good vision. In

this instrument red and green lights were used which could be modified by smoked glasses. The sizes of the lights could be varied and the colored glasses used in railway service could be inserted.

Thomson of Philadelphia, said the effort to protect the railways from defective employees on the Pennsylvania system has been perfected and the officers of the road are so well satisfied that he has been unable to bring them to have re-examinations made. In order to learn by recent testing how many of the old employees have fallen below the standard. The original tests were made by the improved wool test, the methods of using which are fully described in his recent article in Norris & Oliver's System of Diseases of the Eye. In 1894 he sent circulars to the roads of America, the statistics of which have been published. 24 used the Thomson test; 38 Holmgren's; 31 made no test and 34 no response. At that time the roads using tests covered a mileage of 46,000 miles. The new wool test was sent to the railways and it must have had the effect of calling the attention of the officials to the necessity for examination, for when he inquired in 1896 he found that there were 78 who used the new wool test, making a mileage of 106,000 miles with about 180,000 employees. It is a fact that many railroads have no system of examination and it is necessary for the profession to urge all the railroads to use some system of protection against defective eye-sight and defective color vision in their employees.

Mittendorf of New York, said in this country, next to Thomson, nobody perhaps has made as many examinations for color blindness as he has. He has the New York Central under his control and although they have not so far extended these examinations to the brakemen and conductors yet there is not a single engineer or fireman that has not been examined by him personally. The results of his examinations have been so nearly in accord with the report of the British Medical Association, which was published a few years ago, that he has really little to add to it. He emphasized the fact, that the simplicity of the test where a large number of persons are concerned, is of the utmost importance and he has been obliged on account of prejudice to return to the Holmgren wools. If you take the stick you can keep a much better record of it, but we must not forget that some men are exceptionally nervous and in testing they are so confused that they are much more liable to make a mistake simply from being nervous than from being actually color blind. Another is that we should have means of bringing these different colors in shape of signals before the

eyes of the man to be examined in as rapid and quick a way as possible For this he has used round signals of the size of lenses, taking a piece of the flag in actual use and putting it on the stick and he should answer at once whether the color was the red, green or blue. He further agreed with the report of the committee that a great many persons will sometimes make a mistake between blue and green without being actually color blind and this is simply a matter of want of education. Returning after a little while they will always be able to distinguish between green and blue. He has examined between 5000 and 6000 men, not a single man returning after a long time who was able to pass the examination after the first. He has had these men come with a satchel full of worsteds with which they where familiar and they can pick out any of the colors to match but if a larger assortment is taken they fail completely. It is a very important fact in these examinations, if you have a large number of older employees who have been running for years without causing any accident to convince them that these engineers are color blind and for this the Holmgren test is the best. It is known that re-examinations should take place, because in older persons it is not so much the perception of color as it is the acuity of vision which diminishes. He has seen patients who had lost at least $\frac{2}{3}$ and would make no mistake in color perception. Another point is that we must sometimes convince old employees of their inability to see the signals well, especially in foggy weather and therefore we should use the method of Williams. It has been arranged on the New York Central System that if any of the engineers passes a signal that he has to to be examined the next day to find out why he passed the signal, whether it was carelessness or whether defect of vision or imperfection in color perception was the cause. This is compared with the examination on record and we know at once whether the man has lost vision or not.

Fryer of Kansas City, said he has examined a large number of railroad employees for color perception and thinks it is important that the railroad ophthalmic surgeons should urge upon their corporations the necessity of a re-examination at stated times from 2 to 3 years as the case may be. Many of these men are large users of tobacco. Their visual acuity and color perception should both be tested at intervals, after the first examination, of 1 to 3 years. Not longer than 3 years should elapse for second examination. A man should study the cases so that he covers not only examination of color perception but of the eyes and that it should be as thorough as possible including examination of the

visual field and color perception. This instrument of Williams is very useful.

Alt, of St. Louis, said although, of course a firm supporter of the examination of railroad employees he has been unable to impress the railroads with the importance of such an examination. No man is examined by him or any other oculist except if defect is noticed and then they are sent usually with a letter in which he is mildly asked to give as favorable a report as possible. The statement made to him is, that these men have been with them so many years and are valuable employees. If they should now begin to reject men simply because they are color blind they would be doing a great injustice to men who have done service for many years.

Mittendorf, of New York. Since the introduction of this careful examination on the New York Central we have had very few accidents either to freight or passenger trains.

Burnham, of Toronto, said he knew an engineer who had been running for 35 years without ever having had an accident and had never run past a signal. One day he made a break in the record. He was examined and found to be color blind. The fireman was examined and was found to be normal. The authorities did not until that time know that the engineer was color blind.

Mittendorf, of New York. The engineer depended upon his fireman for the recognition of signals.

Rivers, of Denver, asked if any one present had met with cases color blind in one eye and normal in the other. He has not examined as many men as Mittendorf. In the Denver & Rio Grande system all new applicants regardless of their position are subjected to rigid examination not only in regard to acuity of vision but must also be perfectly healthy. These are the only class of people employed. He examines each eye separately and never found anyone who was defective in one eye and not in the other.

Calhoun, of Atlanta, asked Mittendorf and Williams to what extent a man has to be color blind to be rejected by their railroads. In his section of the country the railroads have come very slowly to the examination of their employees. They say, that many employees are old and have been in their employ so long and never have had an accident, which is good evidence that they are all right.

The President said there have been few cases of single eye congenital color blindness. They are very rarely found which may be due to the fact that they have not been looked for on a large scale.

Thomson, of Philadelphia. In the use of the new wool test, the instructions to the operators are to test each eye separately. There are no means of telling how these instructions are carried out.

Rivers, of Denver, has examined all eyes separately. Has not found a one eye case yet. The company have not required that all the men on the road should pass this examination but require every man, woman and child that applies for a position to take the examination before they are employed.

Mittendorf, of New York, in all examinations made has examined the eyes separately and he thinks that if a single eye is color blind it must be a pathological condition. The examination includes only the firemen and engineers.

Williams, of Boston, was for about 6 years the medical director of the Burlington Road, 7,000 miles of track and 5,000 men on the road, so that there was quite a large body. They did not undertake to examine everybody in the service but made it a rule that no one should come into the service in any department, especially where there was anything to do with colors, who was unable to pass the standard medical examination. These examinations were all made by medical men of course, i. e. they were not left to the clerk in the superintendent's office, who might make them in a poor way without testing the applicant as carefully as ought to be done. These reports were all recorded and sent to him for approval, so the report of every examination went under his eye and with the number of the worsteds. If the railroads generally do not have these examinations, a man will be rejected on some road which requires the examination and then simply goes to the next road that does not require an examination and gets a situation. Now the need to-day is to start with a proper method for examination, which applied not to the old men but to new men coming into the service and a man who is in the service and is found defective need not be discharged from duty but provision can generally be found for faithful men in some place and at the same time need not be a danger to the public and their fellow employees. If you can institute a good plan which has sufficient safeguards and is practical and which will meet with the approval of the railroad officials we shall get ahead much better and quicker then when we try to go too far at the start.

Proudfoot, of Montreal. In the Canadian Pacific Railroad a case occurred a short time ago. A man who was connected with the shunting, to the surprise of everyone allowed one of his trains to get off

the track. He said the lights were not all right but they were. They did not appear right to him. On examination he found that the man was not only color blind but had only 1/3 vision. He wrote a letter stating these facts and that the man should be put into another part of the service. They gave him some other employment where he was out of danger.

Burland, of ————. The organization in the South called Local Surgeons of the Plant System of Railways has carried out a magnificient scheme known as Hospital Relief and Fund System which is worthy of notice. This has hospitals attached to it and every new employee has to pass a thorough medical examination. His life is insured against accident and disease. But in these examinations, made very thoroughly by the local surgeon of the road the question of eye trouble, color blindness and defects, etc. is not left in his hands but such a case is sent to a specialist or oculist of that system and examined in this respect before entering into any position that requires his vision to be perfect. The system covers 5,000 employees, 2,500 miles of track. The Thomson system of color examination is used.

Howe, of Buffalo, said one of those who applied at the eye and ear infirmary was entered simply as a railroad employee and was treated for granular conjunctivitis. He had perception of light with one eye and vision equal to counting fingers at a distance of 8 to 10 feet with the other. The man was a switchman and his perception and ability to recognize the signal flags was so slight that he depended upon his ability to recognize the different tones of the whistle and bell. By the way, he was on the New York Central railroad. Such persons should be eliminated from the service of the railroad.

Jehin-Prume of Montreal, said it is the custom of the railways of France, Belgium, Germany and Italy to examine employees regarding their vision and color perception.

H. V. Würdemann, M. D. of Milwaukee, read a paper upon **"Relation of Skiascopy to Other Objective and Subjective Tests for the Estimation of the Ocular Refraction with Exhibition of Instruments."** Skiascopy is without doubt the most accurate of the objective methods for determining the ocular refraction. The cases in which it can not be practiced are exceptional, being those in which a definite visual zone cannot be isolated, although in such cases as in irregular or conical cornea, in partial lenticular or corneal opacities and in very high grades of astigmatism, skiascopy is of great value as a confirmatory test. All of the objective methods, keratometry, direct ophthal-

moscopy and skiascopy have their special field and all are essential to the proper measurement of a refraction case no matter how simple. The ophthalmologist should not confine himself, like the jeweler or optician, to the trial case and practically allow his patient to choose his own glasses, but should *measure the eyes.* In skilled hands, skiascopy gives the most accurate results of all methods not excepting the subjective tests. By the use of the several objective methods the time spent at the trial case is reduced to a few minutes; the proper measurement is placed before the patient's eyes at once and the test by trial lenses is reduced to but a confirmatory test. The confidence of the patient is assured, better work done and time saved by using these methods. In skilled hands skiascopy is of inestimable aid for the measurement of those low grades of astigmatism so commonly needing correction among the educated American classes. Exhibition of hand skiascope and other appliances with method of use followed.

Williams, of Boston, preferred the placing of lenses in the trial frames to most forms of instruments as he used cylinders in the examination. Where only sphericals were used the hand skiascope is valuable. He asked how the shadow test compares in accuracy with the examination by the upright image. As the Javal ophthalmometer gives simply the surface irregularity of curvature we need a test which gives all the ametropia. In a great number of cases there is an astigmatism due to lenticular astigmatism.

Fryer, of Kansas City, was pleased with the essayist's paper and very glad he had called attention to the matter in general of skiascopy. He believed that one cause of its not being generally adopted, is due to the confusion that oculists get from trying to use both mirrors, the concave and the plane. The simplest way is to adopt one or the other mirror. The plane mirror carries with it all simplicity. Make the patient 1 diopter myopic and examine at one meter. It is certainly a simple and exact method.

Jackson, of Philadelphia, showed a trial frame with the front arranged so that the angle can be read while the test is made. It is not numbered in any way but the divisions of white and black are plain and the operator is thus not liable to get confused as to what each one means. Where the principal meridians are oblique, the vertical and horizontal lines give sufficiently accurate measure so that he can estimate within 5 degrees. As regards accuracy, the shadow test is very decidedly superior to the ophthalmometer. The shadow test will not mislead you. The finding of the ophthalmometer may be perfectly

definite and yet the total astigmatism may be greater or less or have a different axis. He cited a case that showed 1.50 of astigmatism in the usual directions with the ophthalmometer and it came out something less than 1 diopter but at 135 and 145 degrees. Sometimes anyone will be mistaken from a single observation of an eye with the shadow test, several may be necessary. The shadow test is more accurate than the upright image although he had a mirror made with a sight hole of 5 mm and 7 mm. He could not do accurate work with it. He has never thought that he could go beyond the limits that Loring suggested and measure less than .75 D. astigmatism. In very many eyes it is possible by the ophthalmoscope to be more mistaken than that. The determination is more accurate with the shadow test. For a great many eyes you can get no such accuracy. It depends upon the refraction in different parts of the pupil how exact you can make your measurements. There is no way that we can tell which part of the pupil the patient sees through except with the trial lenses. If the refraction is comparatively uniform then skiascopy is accurate.

The President said the shadow test is now used in England very generally. In Moorfields, the surgeons were relying very much on the shadow test. He does not use it much as he began very late with it and has not taken it up with enthusiasm. In London comparatively few use the ophthalmometer. He has not very often come across men who use the two methods. One man uses one by preference. Jackson speaks from experience and what he has said shows that the shadow test is much the better of the two. The shadow test does not take very much time. In regard to the question asked by Williams as to the relative accuracy of the shadow test. Anyone who does the shadow test with any degree of accuracy, would come to the conclusion very quickly that the shadow test is much more accurate in giving the direction of the principal meridians and degrees of astigmatism than the ophthalmometer. He uses the ophthalmometer. He is quite sure that the shadow test is a convenient method.

Würdemann, of Milwaukee, closed the discussion stating that Jackson had answered most of the questions raised and had sufficiently elaborated points not fully developed within the limits of his paper. He was pleased to learn from the honored president that the shadow test was again being used by the working ophthalmologists of England. As regards its accuracy he thought there could be but one opinion. Its usefulness depended upon the man with the mirror. In his hands it was ordinarily accurate to .25 diopter in astigmatism as

regards amount, but only to 10 degrees or 15 degrees as regards axis. If tired or over worked, his personal error of equation was much greater and then perhaps even .50 might be allowable. In exceptional instances an accuracy of .12 was possible. If the visual line of both patient and operator practically coincides, there would be no question but that skiascopic correction thereby obtained would give the best obtainable vision.

Abstract of paper by A. A. Foucher, M. D. of Montreal upon "**The Etiology of Dacryocystitis,**" read by J. Jehin-Prume, M. D. of Montreal. There exist numerous causes of dacryocystitis, but its principal element lies in the unhealthy constitutional state of individuals. This conclusion is arrived at after the study of 273 cases. The adjuvant causes, inflammation of the adjoining parts, change in pathologic character of secretion passing through ducts being brought about by debilitating diseases, i.e. variola, tuberculosis, syphilis, etc. Women are more prone to the affection, being of a weaker constitution, are more often ill, pass through critical periods, menstruation, parturition and lachrymation, uterine troubles and menopause, all of which affect the lachrymal ducts more or less to say nothing of the impressionable nature of woman and the very frequent causes which act by reflexion on their lachrymal ducts. Apart from this, the system being prepared by some constitutional unhealthiness or another, interior and exterior infections are favored. Circumstances being now propitious to the production and cultivation of organic microbes and the organism being powerless to render the evil certain, diathesisical manifestations appear and among them we classify dacryocystitis.

Holt, of New York, said one of the causes of dacryocystitis is the using of the eyes for close work too constantly. While in Europe in 1887 he asked every man his opinion of dacryocystitis and his idea as to the cause and got a very large variety of opinions. At that time he had cases where they would have repeated abscesses year after year and upon carefully examining quite a number of these cases he found they had an error of refraction and after he had properly corrected the error of refraction they never had repeated attacks of abscesses. Of late years he has prevented a number of cases by paying attention to correcting the error of refraction. He has very definite treatment in regard to these eyes. He gives ether and uses Theobald's probe and a piece of lead made at the time to fit the canal and leaves it in and has no more trouble with the case. He generally leaves it in for two months but sometimes has allowed it to remain for two years.

Jehin-Prume, of Montreal, said electrolysis with a small wire electrode guarded by rubber insulation will cure some cases. Treatment is given every two days; graduate strength. He had three or four cases with very good results. It should be tried where other methods fail.

Proudfoot, of Montreal. It has been mentioned that a very large majority of females are afflicted with this disease as compared with the male. This is very remarkable. He was connected for many years with the Montreal dispensary and in that institution very few men were treated for this disease as compared to females.

A. Proudfoot M. D. of Montreal, read a paper upon "**The Value of Weak Lenses in Certain Cases.**" Made a strong plea for the use of weak lenses in certain cases. That while owing to occupation, environment and heredity, eyes are more prone to errors of refraction. Our increased knowledge and facilities for relieving these errors has more to do with the increase in the number of glasses worn than any actual degeneration of the organ of sight. He has found in a great number of his patients, who have suffered from headaches and other nervous affections referable to the eyes, an error or from .25 to 1 D., this together with the peculiar temperament, occupation environment and health of the patient, producing reflex irritation sufficient to cause disturbed vision and affecting general constitutional conditions. Great care is needed in discriminating. These same persons in an active out of door life or a sedentary life requiring no taxation of eyes would not need the slight error of refraction corrected, but place them under the unfavorable condition of occupation, environment and health and later symptoms of eye strain will appear. Again these errors may not be complained of until an attempt is made to use the eyes after convalescence from some severe illness. The attendant headache and pain in eyes being attributed to the state of health rather than the defect in the eyes. He cited a number of cases in which everything had been tried without relief and weak lenses properly worn had solved the problem.

Noyes, of New York, suggested the introduction of the word "exceptional" cases in the title of the paper, admitting the facts presented he would say that the habit of ordering weak glasses would tend to carelessness in diagnosis and neglect of other conditions which might be the real cause of complaint. There are cases of extreme susceptibility to refractive errors of a low degree just as there are cases of extreme susceptibility in the use of medicine, as for example,

minute doses of quinine must be given to certain people in the place of the average dose. But to be satisfied with the prescription of a weak pair of glasses, .25 or .50 D. or plus cylinders is only justifiable after a very thorough and exhaustive examination. It shall include all possibility of eye trouble, in muscles, in conjunctival irritation, in central scotoma and other possible conditions, besides the careful inquiry into the general health and hygiene, habits of life and mode of using the eyes. Under these limitations one will naturally find a patient of whom the proper prescription is a weak glass, either to be permanently worn or to be used in near work. This same idea has already been emphasized especially by Chisholm of Baltimore but he put in a plea for its exceptional and unusual applicability.

Jackson, of Philadelphia, agreed with Noyes. The greatest relief is afforded by moderately weak convex glasses of .75 or 1.00 D. and perhaps a still larger part are relieved by teaching them to use their eyes to good advantage.

Proudfoot, of Montreal, said he had presented these cases as exceptional. Those with which he was most particularly impressed were cases that have been sent to him from other physicians who have tried the patient for some length of time with glasses for relief of the headache and nervous symptoms.

Thanks were then extended to the president and other officers in remarks by Howe of Buffalo. The meeting then adjourned.

THE
OPHTHALMIC RECORD

A Monthly Review of the Progress of Ophthalmology.

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EDITORIALS.

THE SECTION OF OPHTHALMOLOGY AT THE MONTREAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

It is a matter of regret that with the exception of the Chairman not an English ophthalmologist was present at the meeting of this section. Under the skilful guidance of Mr. Nettleship the work of the section went on admirably. No opportunity was given for presenting individual views on cataract for on this subject only one paper was read and that dealt with "Experiences with Cataract" and the Chairman wisely decided that such a paper did not call for a long and general discussion of the subject of cataract, a subject which offers an irresistible temptation to talk, for rarely do we see the end till every man has had his say. It is apparent that a truer conception of the principles of antisepsis and asepsis as applied to the eye prevails than formerly. The days of weak sublimate solutions seem numbered and asepsis rightly gets the credit for the success which for so long has been ascribed to antisepsis. The subject of the hypodermic injection of pilocarpin in certain affections of the eye commanded attention and brought out not a little discussion. Sympathetic ophthalmia and retinal detachment were mentioned among the diseases as signally benefitted by this method of treatment, and it was somewhat startling to hear the glibness with which cases of retinal detachment were reported as cured. A patient with double retinal detachment and complete loss of light perception was restored to the power of reading large type. In justice to oneself one should always go fully into details when reporting unique cases. Clinical experience the world over has relegated a case like this to a class which is irremediable and the anatomical changes which are present in such an advanced stage of the dis-

ease would seem to warrant this classification. Since the use of salicylic acid ointment in the treatment of "Vernal Catarrh" the prognosis of this disease may be said to have assumed a brighter aspect. Judging from the value of salicylic acid in chronic skin affections, the hope at least may be expressed that we have found a "good thing," though as yet it is rather soon to speak positively in its favor. There was quite a thorough ventilation of the subject of color sense in its bearing upon the railway and marine service, and while much that was said in this connection showed an advance in the refinements of the tests it is doubtful whether any one suggested a substitute which will be found preeminently reliable and at the same time practicable. Retinoscopy has been steadily making its way and instead of being on the wane in England as many of us think over here, it has practically superseded other methods in the large eye hospitals in that country and is used universally in private practice. It is clear that the method possesses decided advantages over the ophthalmometer. A number of clinical communications of more or less interest were made, and rather pretty anatomical specimens were exhibited. The work then was interesting throughout but the delightful recollections of the beautiful city and its hospitalities will remain long after what was said and done in the meetings has been forgotten.

R. L. R.

OPHTHALMOLOGY IN MEDICAL COLLEGES.

In the August issue of the OPHTHALMIC RECORD, as an indication of the improved status of ophthalmology in the medical curriculum, a synopsis was given of the thorough examinations which the senior students of the Medical Department of the University of Pennsylvania must pass in this branch of medical science.

In this connection a brief mention of the methods of ophthalmic teaching in the *Jefferson Medical College* may be of interest: The attendance of the students of the third and fourth years upon the didactic and clinical lectures, each occuring once a week, is compulsory. Every afternoon the students of the fourth year, divided into suitable sections, are required to visit the Dispensary for Diseases of the Eye where they receive practical instruction in the functional testing of the eye, refraction, the diseases of the eye and ophthalmoscopy. They witness the operations performed in the clinical amphitheatre and private

operating room, and have the opportunity of attending quizzes on ophthalmology and demonstrations of operations on animals' eyes. In addition to the lessons in practical ophthalmology itself, the attention of the students is constantly directed to the relation of ocular symptoms and diseases of the eye to general diseases. Altogether eight hours weekly are devoted to ophthalmology—two to lectures and six to practical work in the dispensaries. These hours are exclusive of special lectures and demonstrations. At the close of the session the candidate for graduation must appear before the Professor of Ophthalmology and pass a thoroughly satisfactory examination upon the work of the preceeding year.

AMBLYOPIA.

If there is any science in the practice of medicine it should be in the department of ophthalmology, in which, nearly all the examinations are made objectively, and yet particularly in the subject of this editorial, amblyopia we find very diverse views among ophthalmologists. Uner these circumstances the writer has felt that a free discussion, without prejudice, might in some way settle this question, but in order to do so we should understand the terms, Amblyopia Ex anopsia and that of amblyopia congenitalis.

Foster's definations of these two terms cannot always be reconciled with the present observations of oculists, while those of Dr. Laertus Connor, in a paper read before the Ophthalmic Section of the American Medical Association, in his conclusions, places these two terms in a very practical light, but can we not accept these conclusions and yet at the same time, define exactly what we mean by the above terms? or in other words; can we not "draw the line" between the congenital condition and that caused by non-use?

I have, clinically for some time, endeavored to settle this complex question and have tested and watched my cases for several years and today I cannot recall a case of congenital amblyopia in which I have seen any improvement of the vision, either with glasses or after an operation, while on the other hand, I have seen cases that I have considered should be classed as deminished vision—due to non-use—which have materially improved under the use of glasses or after an operation.

In reference to amblyopia congenitalis I do not believe the brain has any part to play in the dullness of vision any more than I believe

n the innervation theory of squint, as I do not believe the visual impressions on the cones of the retina are transmitted to the brain, but that the fault lies in the retina itself and consequently the brain does not inhibit the visual centre from receiving these impressions. Why this should only occur in the one eye and the vision of the other be perfect we cannot explain but we know it to be a clinical fact.

Let us then define amblyopia congenitalis as a condition of the retina in which we have deminished vision of $\frac{20}{100}$, or less, with or without the correction of any existing error. This may or may not be associated with squint and yet perfectly free from any pathological condition wathever, and that will not be improved by treatment. On the other hand we will define amblyopia ex anopsia as the condition of deminished vision in which there is evidence of non-use. That the visual power will be better than $\frac{20}{70}$, which will improve with the correction of the refraction. That is always associated with squint and may or may not need an operation.

If we can accept these two conditions clinically then the intelligent treatment of all our cases of squint will be very simple. In one case we shall seek to improve the cosmetic appearance of our patient, regardless of binocular vision and in the other we must not only correct the squint but by the most careful examination and correction of the refraction aim to attain an improvement in the amblyopia with binocular vision.

T. V.

This number of the RECORD is largely devoted to reports of the proceedings of the Ophthalmological Sections of the International Medical Congress held in Moscow, Russia, and the British Medical Association which met in Montreal, Canada. We have been fortunate in obtaining rather full abstracts of the papers, with their discussions. In order that these reports should not be continued over several numbers of the RECORD, it has necessitated the crowding out of several original articles, whose authors were promised space in the October issue. They will appear in the November RECORD.

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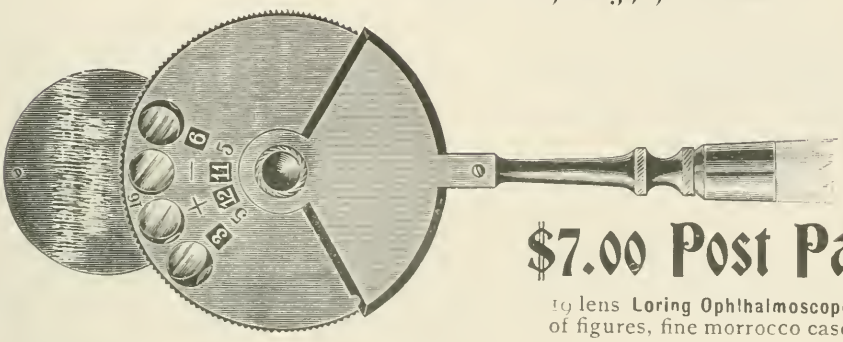

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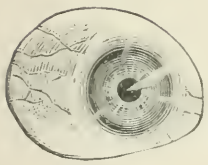

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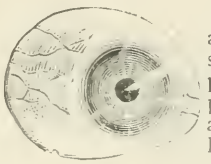

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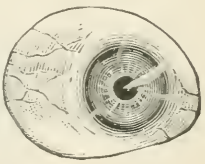

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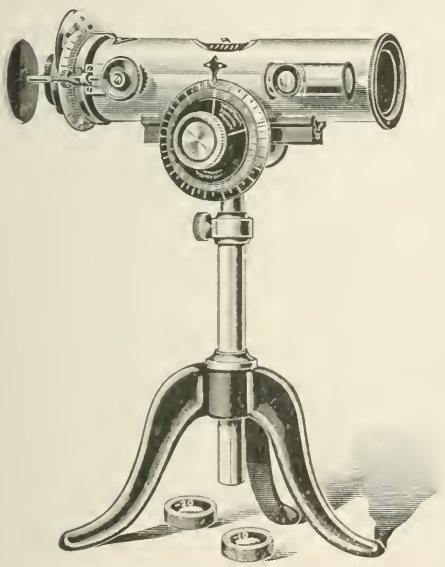

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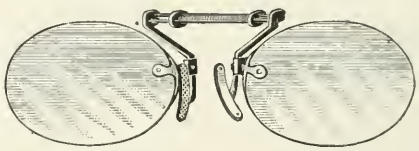

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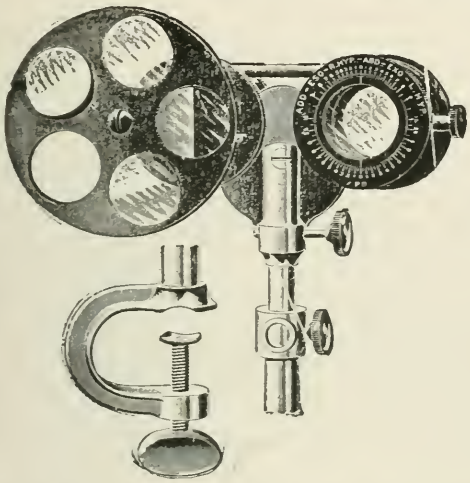

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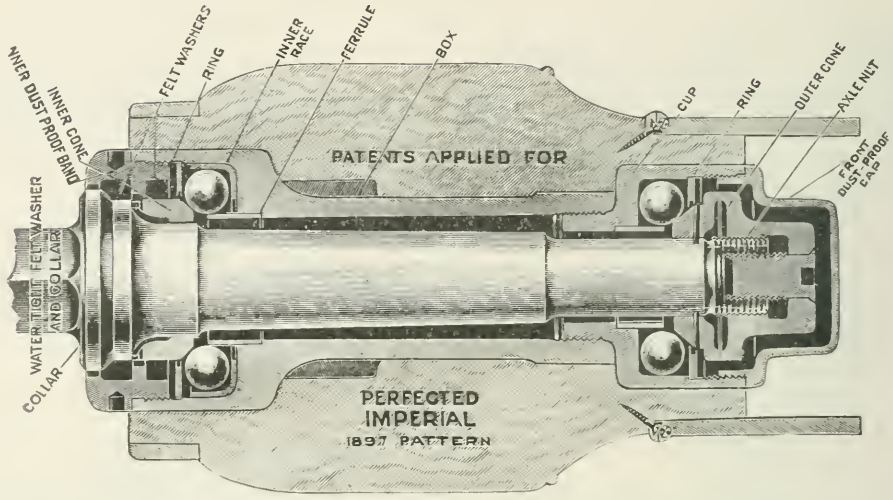

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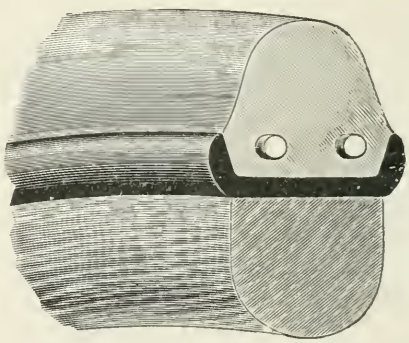

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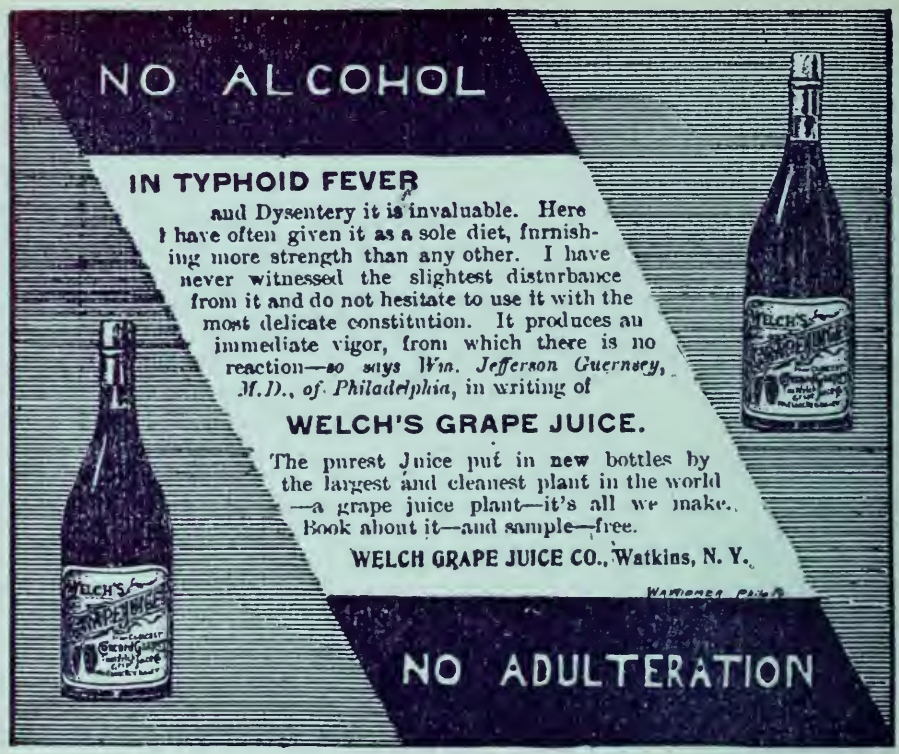
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